

**BASIC DESIGN STUDY REPORT
ON
THE PROJECT FOR
IMPROVEMENT OF MEDICAL EQUIPMENT
IN PRIMARY HEALTH CARE INSTITUTIONS
(PHASE III)
IN
BOSNIA AND HERZEGOVINA**

AUGUST 2004

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

CONSORTIUM

**MATSUDA CONSULTANTS INTERNATIONAL CO., LTD.
INTERNATIONAL TECHNO CENTER CO., LTD.**

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PREFACE

In response to a request by the Government of Bosnia and Herzegovina, the Government of Japan decided to conduct the Basic Design Study on the Project for Improvement of Medical Equipment in Primary Health Care Institutions (Phase III) in Bosnia and Herzegovina and entrusted the Study to the Japan International Cooperation Agency (JICA).

The JICA sent a study team to Bosnia and Herzegovina from 9th February to 11th March, 2004.

The study team held discussions with the officials concerned of the Government of Bosnia and Herzegovina and conducted a field survey in the study area. After the team returned to Japan, further studies were made. Then a mission was sent to Bosnia and Herzegovina in order to discuss a draft basic design, and as this result, the present report was finalized.

I hope that this report will contribute to the promotion of the Project and to the enhancement of friendly relations between our two countries.

I wish to express my sincere appreciation to the officials concerned of the Government of Bosnia and Herzegovina for their close cooperation extended to the teams.

August, 2004

Matsui Yasuo
Vice Prsident
Japan International Cooperation Agency

August, 2004

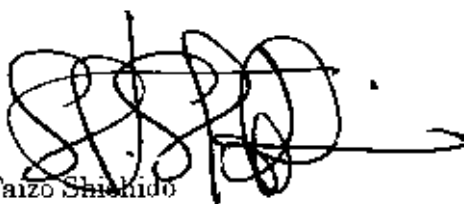
LETTER OF TRANSMITTAL

We are pleased to submit to you the basic design study report on the Project for Improvement of Medical Equipment in Primary Health Care Institutions (Phase III) in Bosnia and Herzegovina.

This study was conducted by the joint venture between Matsuda Consultants International Co., Ltd., and International Techno Center Co., Ltd. under a contract to JICA, during the period from February 2004 to August 2004. In conducting the study, we have examined the feasibility and rationale of the project with due consideration to the present situation of the Bosnia and Herzegovina and formulated the most appropriate basic design for the project.

Finally, we hope that this report will contribute to further promotion of the project.

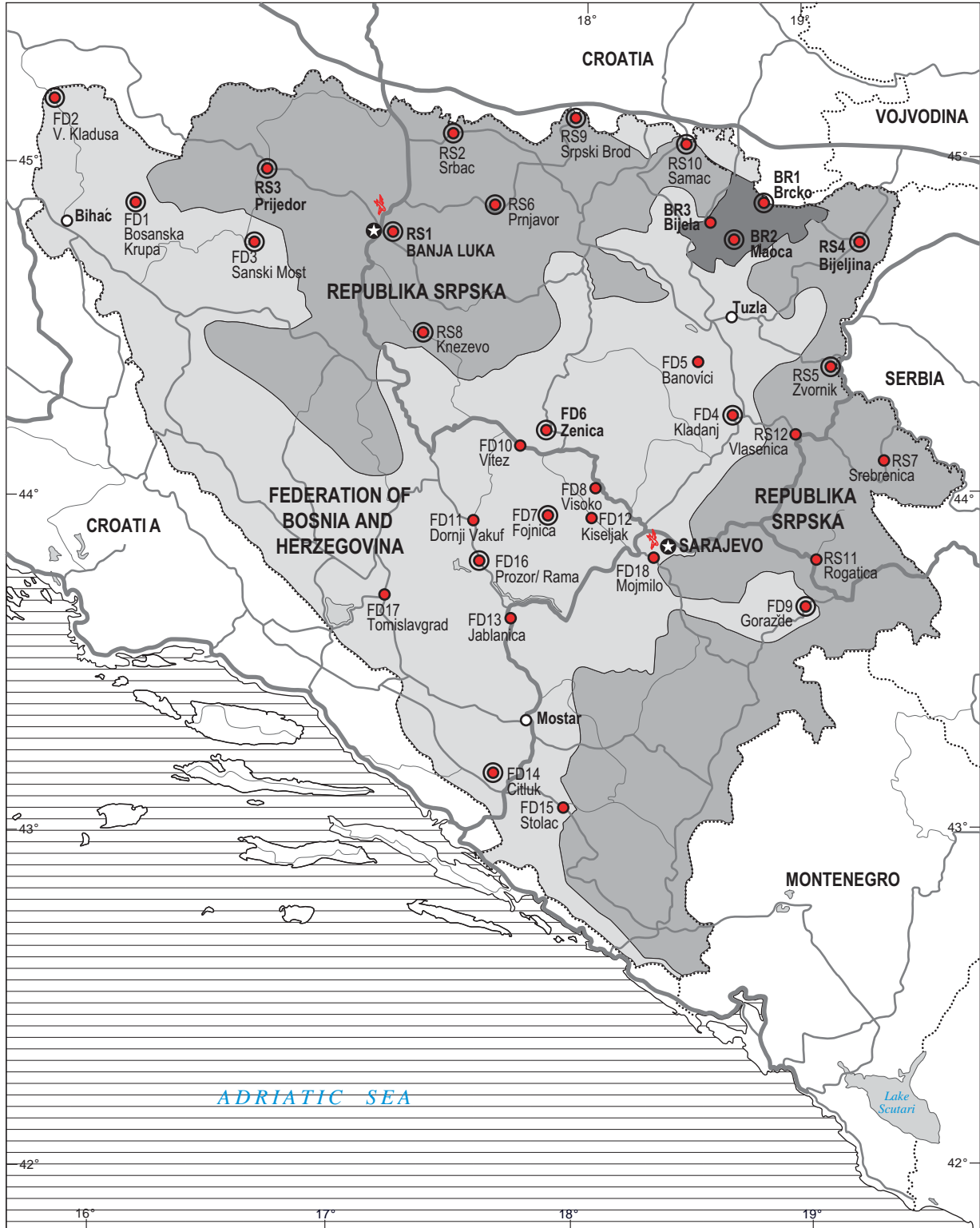
Very truly yours,



Taizo Shishido

Project manager,
Basic design study team on
the Project for Improvement of Medical Equipment
in Primary Health Care Institutions (Phase III) in
Bosnia and Herzegovina
Consortium
Matsuda Consultants International Co., Ltd.
International Techno Center Co., Ltd.

Location Map: Targets of Dom Zdravlja



<ul style="list-style-type: none"> Federation of Bosnia and Herzegovina Republika Srpska BRCKO DISTRICT 	<ul style="list-style-type: none"> Capital Project site (equipment) Project site (equipment+facility) International boundary Inter-entity boundary line Republic boundary Provincial boundary Main road Secondary road Airport 	<p>0 10 20 30 40 50 km</p> <p>0 10 20 30 mi</p>
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ABBREVIATIONS

AM	Ambulanta
BiH	Bosnia and Herzegovina
BR	Brcko District Bosnia and Herzegovina
DZ	Dom Zdravlja
E/N	Exchange of Notes
ECHO	European Commission Humanitarian Office
FBiH	Federation of Bosnia and Herzegovina
FM	Family Medicine
FN	Family Nurse
FP	Family Physician
NCRP	National Council on Radiation Protection and Measurement
PHC	Primary Health Care
PRSP	Poverty Reduction Strategy Paper
RS	Republic of Srpska
WHO	World Health Organization

SUMMARY

Following the cessation of interethnic strife, Bosnia and Herzegovina (BiH) signed the Dayton Peace Agreement in December 1995 and has since been trying to reestablish itself as a stable, growing country in Southeastern Europe by acceding to the Stability Pact for Southeastern Europe in June 1996 and hosting the Summit on the Stability Pact for Southeastern Europe in Sarajevo in July 1996. At present, Bosnia and Herzegovina is a federal republic comprised of two entities that were established under the Dayton Peace Agreement, namely, the Federation of Bosnia and Herzegovina (FBiH) and Republika Srpska (RS), plus the District of Brcko (BR) that became an autonomous district in March 2000. The total population is 4.1 million (2.5 million in FBiH, 1.55 million in RS, and 0.05 million in BR) according to the 2002 statistics of the United Nations.

In Bosnia and Herzegovina, Dom Zdravlja (DZ) of each administrative unit (town or village) is the main provider of PHC services, including internal, pediatric, and gynecologic/obstetric care, diagnostic activities by means of x-ray examinations and laboratory tests, and first aid and transfer of emergency patients to regional hospitals.

Each DZ has a varying number of health stations or Ambulanta (AM) depending on the population size and the geographical scale of its jurisdiction, playing a significant role in the delivery of PHC in the area. However, such PHC facilities also suffered considerable damages from the interethnic conflict, and many DZ struggle to provide adequate services due to obsolete, malfunctioning, and/or insufficient x-ray/testing equipment and emergency vehicles, combined with a shortage of spare parts. Deteriorated PHC services have driven many patients to secondary or tertiary medical institutions, leading to inefficiency of the entire health system.

Under these circumstances, BiH formulated the Health Sector Rehabilitation and Improvement Plan 1997 with support from the WHO. The plan emphasizes the fortification of PHC and the introduction of family medicine (FM) teams comprised of general practitioners and nurses as its overall objectives under the three common goals of i) reform of medical/health systems, ii) upgrading of medical facilities and optimum allocation of medical staff, and iii) reform of health care financing. In essence, this is a reform that shifts the allocation of health care resources from upper-level hospitals to primary medical facilities. The country's Poverty Reduction Strategic Plan, the Action Plan of which is to be launched in 2004, carries similar policies to further the health-sector reform in that direction.

This project was conceived in response to the BiH government's request for Japan's Grant Aid as part of their endeavors to improve DZ. While the all DZ throughout the country were listed as target sites in the original request, Phase I of this project implemented in 1997 assisted 27 DZ, and Phase II in 1998 covered additional 25 sites. Subsequently, another request was made to upgrade yet another 33 DZ by renewing their equipment and renovating the facilities of 18 of them.

In response to the subsequent request, the government of Japan decided to conduct a basic design study and dispatched a Basic Design Study Team to BiH during a period between February 9 and March 11, 2004. The Study Team surveyed the proposed sites upon meeting with the personnel of the Health Ministries of both entities and the Health Department of Brcko District to discuss and confirm the final contents of the request. Based on the survey findings, the Study Team examined the appropriateness of this project, the viability of the implementing organizations and operation/maintenance systems of the recipient country, and the expected effects of the project in order to select the most suitable equipment items and determine the scope of necessary renovation works. The Study Team compiled the results into a document titled Draft Basic Design Study Report, and visited BiH to explain the contents of the document from June 28 to July 14, 2004.

The Study Team made a comprehensive assessment of each of the 33 sites from various angles, including operational capacities vs. demand for medical care, status of basic infrastructure, and accessibility to the site. As a result, it was determined that all sites were qualified for assistance and that supplementing the insufficiency of their equipment and facilities would greatly enhance the functionalities of the DZ. Based on the assessment, the Basic Design was drafted for these 33 sites.

Basic policies on equipment planning are essentially the same as those of Phases I and II. Equipment to be procured under Phase III consists of 19 items related to diagnostic imaging, physiological/laboratory test, and emergency care. However, computers that had been a part of the original request were excluded, as they could be used for a variety of other purposes. Individual equipment items were selected and necessary quantities were determined to best suit the present status of each DZ by clearly identifying the specific roles and functions that the DZ was expected to perform in the community, allocation of FM team and medical staff, status of the emergency care system, and budget for equipment maintenance, as well as by assessing the quantity, the number of years in use, and the conditions of the existing equipment.

Japan's possible involvement in facility renovation was examined by limiting the assistance to the areas in which x-ray equipment will be installed under this project, comparing the equipment cost versus its safe/effective use, and clarifying the liabilities in the construction works undertaken respectively by the two countries. As a result, it was decided that Japan would take charge of the procurement and installation of expensive x-ray shielding doors and windows for 22 sites, and the BiH side agreed to take on the rest of the renovation works.

Based on the comprehensive analysis of the geographical and socio-economic conditions of BiH, as well as the status of the medical equipment market and possible procurement methods and schedules, it was decided to split Phase III in two periods according to the type of equipment.

This project, through the grant aid provided by the Government of Japan, will upgrade the 85 DZ (27, 25 and 33 in Phases I, II and III, respectively) where priority and urgency are high, covering a majority (about 65%) of the 131 DZ across the country.

Specific items of medical equipment and x-ray protective doors and windows to be procured by this project are listed in the table below.

Contents of Equipment and X-Ray Shielding Doors/Windows to be Procured by this Project

Code No.	Site Name	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	1E	1F	1G	1H
		RTG apparatus	Film X-ray development machine	Ultrasound	Spirometer	ECG	Biochemistry analyzer	Spectrophotometer	Blood cell counter	Microscope	Centrifuge	Sterilizer	Balance	Destilator	Washing machine for lab. Glassware	Ambulance vehicle	Defibrillator	Reanimation set	Laryngoscope	Aspirator	X-Ray sealed door 600W	X-Ray sealed door 900W	Monitor window 600W	Monitor window 800W
<input type="checkbox"/> Federation of Bosnia Herzegovina																								
FD01	Bosnska Krupa	1	1	1	1	1	1			2	1	1	1	1	1	1	1	1	1	1				1
FD02	Velika Kladusa	1	1	1	1	1	1			1	1	1	1	1	1	1		1	1	1	1	1		1
FD03	Sanski Most	1	1	1	1	1	1	1	1		1	1	1	1	1	1	1	1	1	1				1
FD04	Kladanj	1	1	1	1	1				1	1	1	1	1		1	1	1	1	1	1	1	1	1
FD05	Banovici		1	1	1	1		1		1	1	1	1	1			1	1	1	1				
FD06	Zenica	1	1	1	1	1		1		1	1	1	1	1	1		1	1	1	1	1	1	1	1
FD07	Fojnica	1	1	1	1	1		1	1	1	1	1	1	1		1	1	1	1	1	1			
FD08	Visoko	1				1		1	1	1	1				1	1	1	1	1	1				
FD09	Gorazde	1	1	1		1	1		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
FD10	Vitez			1	1	1		1		1	1	1	1			1	1	1	1	1				
FD11	Donji Vakuf	1	1	1	1	1		1	1		1		1	1		1	1	1	1	1	1	1		1
FD12	Kiseljak	1	1	1	1	1		1		1	1	1		1		1	1	1	1	1	1	1		1
FD13	Jablanica	1	1	1	1	1		1	1		1	1		1		1	1	1	1	1				
FD14	Citluk	1	1	1	1			1	1	1	1	1	1	1		1	1	1	1	1		1		1
FD15	Stolac	1	1	1	1	1		1	1	1	1	1	1	1		1	1	1	1	1	1			
FD16	Prozor/Rama	1	1	1	1			1	1		1	1	1	1		1	1	1	1	1	1	1		1
FD17	Tomislav Grad	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		1	
FD18	Saraj Plje	1	1	1	1			1		1	1	1	1	1		1	1	1	1	1				
SUB. TOTAL		16	16	17	16	15	5	12	11	11	18	16	15	17	6	16	15	18	17	17	7	5	3	8
<input type="checkbox"/> Republic of Srpska																								
RS01	Banja Luka	1	1	1	1	1	1		1	1	1	1	1	1	1			1	1	1	3	2	1	1
RS02	Srbac	1	1	1	1	1		1	1		1	1	1	1			1	1	1	1				1
RS03	Prijedor	1	1	1		1			1	1	1	1	1	1		1	1	1	1	1			1	1
RS04	Bijeljina	1		1		1	1		1	1	1	1	1	1	1	1	1	1	1	1				1
RS05	Zvornik	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	1
RS06	Prnjavor	1	1	1	1	1	1	1	1	1	1		1	1		1	1	1	1	1	2	1	1	1
RS07	Srebrenica	1				1						1	1			1	1	1						
RS08	Knezevo	1	1	1		1		1	1	1	1	1	1	1		1	1	1	1	1	1	1	1	1
RS09	Srpski Brod	1	1	1	1			1	1	1	1		1	1		1	1	1	1	1	1	1	1	1
RS10	Samc	1	1	1		1			1	1	1	1	1	1		1	1	1	1	1				1
RS11	Rogatica	1	1	1		1			1	1				1		1		1		1				
RS12	Vlasenica	1		1		1			1	1	1	1	1	1		1	1	1	1	1				
SUB. TOTAL		12	9	11	5	11	4	5	11	10	10	9	9	11	3	10	10	12	10	11	8	8	4	9
<input type="checkbox"/> Brcko																								
BR01	Brcko	1		1		1	1	1		1	2	1	1	1	1	1		1	1		2		1	1
BR02	Maoca	1			1	1				1	1	1				1		1				2		
BR03	Bijela		1		1	1				1	1					1		1						
SUB. TOTAL		2	1	1	2	3	1	1		3	4	2	1	1	1	3		3	1		2	2	1	1
Total		30	26	29	23	29	10	18	22	24	32	27	25	29	10	29	25	33	28	28	17	15	8	18

The Ministry of Foreign Affairs of BiH serves as the liaison office of this project to supervise and coordinate the entire project. Implementing agencies of this project are the Federal Ministry of Health of FBiH, the Ministry of Health and Social Welfare of RS, and the Department of Health, Public Safety and Community Services of BR.

Each target DZ will be in charge of controlling and maintaining the equipment to be procured by this project, most of which will be replacing the existing equipment thus requiring no special operational training or maintenance system, as the current staff of the DZ are already versed in the operation/maintenance of such equipment. Equipment maintenance cost will be within the budget that the BiH government can afford. Moreover, Phase III will not require additional personnel, except for one radiological technician, who has already been reserved.

Implementation of Phase III will take about 4.5 months for tendering. It will take another 9 months during the first period and additional 8 months or so during the second period for procurement and installation of equipment. The total project cost, if implemented under Japan's Grant Aid scheme, is roughly estimated at 1.298 billion yen (of which Japan will bear 1.273 billion yen, and BiH 25 million yen).

Implementation of Phase III is expected to produce the following effects:

- Enhanced Diagnostic Functions of Target DZ

Provision of necessary equipment for the 33 target DZ through the implementation of the project will enable the DZ to perform more precise and accurate diagnosis and deliver more prompt and proper services. As a result, the diagnostic capabilities of the DZ will improve both qualitatively and quantitatively, reducing the waiting time of patients requiring medical tests and examinations, and increasing the number of diagnostic imaging examinations and physiological/laboratory tests that each DZ can perform in a given time.

- Enhanced Emergency Care Functions of Target DZ

Implementation of the project will provide 29 of the 33 DZ with emergency vehicles and all 33 DZ with defibrillators, reanimation kits, laryngoscopes, aspirators, and other emergency care equipment. As a result, the emergency care functions of the target will be expectedly enhanced to a great extent.

- Improvement of X-Ray Protection at the Radiology Departments of Target DZ

This project will procure expensive x-ray protective doors and leaded glass windows that are needed by 22 DZ, thereby improving the x-ray protection of the target DZ and ensuring safety and effective utilization of the radiological equipment to be procured under this project.

- Enhanced PHC through Upgraded DZ

The implementation of the project will upgrade 33 DZ, which will have a significant positive effect on the enhancement of PHC, as it will cover about 25% of total of 131 DZ that play an essential role in the delivery of PHC throughout the country. Combining the previous phases, this project will cover a total of 85 DZ (27 in Phase I, 25 in Phase II, and 33 in Phase III), which will account for about 65% of 131 DZ.

- Improvement of Residents' Health in the Jurisdictions of Target DZ

The implementation of the project will improve the diagnosis and emergency care functions, as well as preventive care, of the target DZ on the primary level, which as a result will enable the secondary and tertiary medical facilities to provide more efficient treatment, contributing to the well-being of the residents. This project will upgrade 33 DZ, the population coverage of which is 1.47 million, benefiting about 36% of the total population of BiH of 4.10 million.

This project is expected to produce a number of positive effects as described above and, at the same time, contribute to the basic human needs of the people of Bosnia and Herzegovina through the enhancement of primary health institutions. Thus, implementing this project under Japan's Grant Aid scheme is deemed not only highly appropriate but also of great significance.

It is possible for the recipient country to continually invest personnel and technical/financial resources in the operation/maintenance of the equipment to be procured by this project. However, to ensure smooth and effective implementation of this project, the following tasks need to be performed by the BiH side:

- Facility renovation works necessary for the installation of x-ray equipment that were undertaken by the BiH side must be completed before the installation work is scheduled to begin.
- BiH should develop an effective equipment maintenance system, by clarifying the roles and functions of maintenance centers, utilizing the manufacturers' agencies, etc.
- In spreading the FM system nationwide on a sustainable basis, geological disadvantages of the area of each DZ, especially those of underpopulated or mountainous regions, should be taken into consideration. The current harsh working conditions in mountainous areas, where access by car is difficult, hinder securement of FM doctors and nursing staff. Therefore, creating incentives to motivate doctors to be involved in FM will be an important approach.

- Although the film-developing machines to be procured by this project will not conflict with the current regulations, it is recommended that each DZ to dispose waste solutions by contracting specialized vendors. Preferably, new regulations on the disposal of film processing agents should be formulated in the near future.

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CHAPTER 1

BACKGROUND OF THE RROJECT

CHAPTER 1 BACKGROUND OF THE PROJECT

In Bosnia and Herzegovina (BiH), Dom Zdravlja (DZ) of each administrative unit (township or village) plays a central role in providing primary health care (PHC) services for the nation. However, 30% of the country's primary health facilities were damaged by war that destroyed a significant amount of the country's assets. Because of the damage, combined with the underdeveloped equipment maintenance system and lack of spare parts, DZ in many parts of the country cannot function fully. As a result, the quality of PHC services has deteriorated, driving many patients to secondary or tertiary medical institutions, bringing down the overall efficiency of the health/medical systems of the whole country.

The governments of BiH has recently formulated a plan to restore and improve the country's health systems mostly in the area of PHC, and the Health Ministries of both entities and the Health Department of BR are making various efforts to fortify PHC and introduce the Family Medicine System as top priority agendas based on the following three policies: i) reform of medical services/systems, ii) functional enhancement medical facilities, and iii) financial improvement of the medical sector. Consequently, the PRSP to be launched in 2004 also gives top priority to the strengthening of PHC through the introduction of family medicine.

At present, the inadequacy of medical equipment at primary health facilities remains to be a major obstacle to implementing these programs. Due to financial constraint, it is difficult for the two entities and Brcko District to solve the problems faced on their own.

Under these circumstances, this project was conceived based on the request of the governments of BiH for Japan's Grant Aid assistance toward upgrading DZ. Although the original request was made for upgrading all DZ throughout BiH, 27 DZ were selected as target sites of the Phase I of this project that was implemented in FY 1997, and 25 DZ were covered in Phase II in FY 1998. Subsequently, the governments of BiH requested the Japanese government to extend additional grant aid assistance as Phase III for upgrading additional 33 DZ, which comprised of equipment renewal of all sites and facility renovation of 18 sites.

The details of request are as outlined below:

- 1) Sites for Which Survey was Requested
 - DZ in Bosnia and Herzegovina: 33 sites in total
 - FBiH: 18 sites
 - RS: 12 sites

BR: 3 sites

2) Contents of the Request

- Procurement and installation of equipment for 33 DZ.
19 Items related to diagnostic imaging, physiological/laboratory tests, and emergency care
(Computers included in the original request were excluded from the project, as they could be used for other purposes and have a relatively short operating life.)

3) Sites for Which Facility Renovation was Requested

- 17 of 33 DZ for which survey was requested

FBIH: 6 sites

RS: 9 sites

BR: 2 sites

(Although the original request was made to cover 18 sites, 17 were finally selected as a result of the site survey.)

CHAPTER 2

CONTENTS OF THE RROJECT

CHAPTER 2 CONTENTS OF THE PROJECT

2.1 Basic Concept of the Project

The health and medical sector of Bosnia and Herzegovina today has mostly overcome the direct and indirect damages of the past ethnic conflicts and is now focusing on rebuilding its health / medical system to deliver improved services to the nation. The top priority area of the country's health reform is the improvement of primary health care (PHC) through the upgrading of primary health facilities and the development of family medicine (FM). PHC services are provided at each local Dom Zdravlja (DZ), which also plays a central role in the introduction of FM system and holds the key to the enhancement of the country's PHC. However, as most of DZ are not adequately equipped to provide proper medical services, upgrading of DZ through procurement and provision of medical equipment is an urgent task.

Under these circumstances, the Japanese government has implemented the Project for the Improvement of Medical Equipment for Primary Health Care Institutions (Phase I and Phase II). This Basic Design is for the third phase of said Project that aims to assist the restoration and improvement of PHC in Bosnia and Herzegovina by focusing on the upgrading of DZ. More specifically, it aims to achieve the following objectives: i) improvement of diagnostic capabilities of DZ (diagnostic imaging, physiological and laboratory tests) and ii) establishment of an emergency care system in each administrative district (acceptance of emergency patients and swift transfer to higher-level facilities). The third phase of this Project will cover 33 DZ, for which assistance was requested, as they were not included in Phase I or Phase II. This Project will procure for the 33 DZ certain medical equipment items for diagnosis and emergency care that are comparable to those procured in Phases I and II. Also, it will renovate the facilities of 22 of the 33 DZ

It is expected that the implementation of this Project will fortify the functions of the target DZ, thereby contributing greatly to the improvement of PHC in the administrative districts, as well as to the enhancement of the wellbeing of the residents.

2.2 Basic Design of the Requested Japanese Assistance

2.2.1 Design Policy

(1) Basic Policy

This assistance Project shall be designed based on its objectives and the framework of Japan's Grant Aid system, while giving a careful consideration to the sustainable operation of each DZ. At the same time, its contents shall reflect fully the results of the Basic Design Study in Bosnia and Herzegovina, such as the discussions with the personnel of the relevant Bosnian government agencies and each target DZ, direct observation of the existing facilities and equipment, and questionnaires regarding the operation and maintenance of the facilities and equipment; as well as the subsequent analysis of the Basic Design Study findings in Japan and discussions with relevant Japanese government agencies.

1) Basic Policy on Planning the Project

The Japanese and Bosnian sides have agreed to design this Project based on the framework of Japan's Grant Aid system, as well as on the following principles:

- ① Like other bilateral assistance projects, this Project will assist the self-help efforts of the implementing agencies of the recipient side, which in this case are the Ministries of Health of the two entities and the Department of Health of the Brcko District.
- ② The scale of the Project shall be appropriate to the operational / administrative budgets for the PHC activities of the implementing agencies so that the target DZ will be able to sustain the upgraded facilities.
- ③ The equipment items to be procured under this Project shall be appropriate to the medical demand, technical level, and maintenance capacity of each target DZ.
- ④ Provision of equipment shall be the top priority of this Project. Renovation work will be done only to the extent that such work is necessary for proper installation and operation of the equipment to be procured.

2) Policy on Selecting Target Sites

For this Project, the request was made to supply equipment for 33 DZ as listed in Table 2-1 below, of which 18 DZ are situated in the Federation of Bosnia and

Herzegovina (FBiH), 12 in Republika Srpska (RS), and 3 in the District of Brcko (BR). In addition, renovation work for 18 DZ was initially requested, from which the Bjela DZ in BR was excluded, as the site survey confirmed and the Bosnian side agreed that no equipment for the radiology department was requested for the DZ and the facility was well maintained. As a result, 17 DZ (6 DZ in FBiH, 9 in RS, and 2 in BR) was selected for renovation work.

Table 2-1: List of Target Facilities Finally Requested by the Recipient Country

Federation of Bosnia and Herzegovina		Republic of Srpska	
Code No.	Site Name	Code No.	Site Name
FD1	Bosanska Krupa	RS1	Banja Luka (w/ Renovation)
FD2	Velika Kladusa (w/ Renovation)	RS2	Srbac (w/ Renovation)
FD3	Sanski Most	RS3	Prijedor (w/Renovation)
FD4	Kladanj (w/ Renovation)	RS4	Bijeljina (w/ Renovation)
FD5	Banovici	RS5	Zvornik (w/ Renovation)
FD6	Zenica (w/ Renovation)	RS6	Prnjavor (w/ Renovation)
FD7	Fojnica	RS7	Srebrenica
FD8	Visoko	RS8	Knezevo (w/ Renovation)
FD9	Gorazde (w/ Renovation)	RS9	Srpski Brod (w/Renovation)
FD10	Vitez	RS10	Samac (w/ Renovation)
FD11	Donji Vakuf	RS11	Rogatica
FD12	Kiseljak	RS12	Vlasenica
FD13	Jablanica	Brcko District	
FD14	Citluk (w/ Renovation)	Code No.	Site Name
FD15	Stolac	B1	Brcko (w/ Renovation)
FD16	Prozor/ Rama (w/ Renovation)	B2	Maoca (w/ Renovation)
FD17	Tomislavgrad	B3	Bijela
FD18	Saraj Polje		

With regard to the selection of target sites from the standpoint of bringing forth the maximum effect of Japanese assistance, the Japanese and Bosnian sides both agreed to choose particular DZ that were performing important social functions with high potential for the future according to the following criteria:

- ① Target DZ shall have sufficient capabilities to satisfy the local residents' demand for medical services,
- ② Target DZ shall be adequately installed with basic infrastructure that is necessary for the installation of the equipment, including electricity, service water, and sewage.
- ③ Target DZ shall be accessible via sufficiently developed roads so that the medical equipment and construction materials for renovation work can be delivered to the sites without hindrance.

As shown in Table 2-2 below, all 33 sites are deemed qualified for this assistance project in terms of their operational capacities based on the indices of [A] population coverage, [B] operational budget, [C] number of patients per day, [D] number of tests conducted per month, and [E] number of staff members. Also, our site survey of each site observed no major deficiencies in their basic infrastructure and accessibility.

Table 2-2: Operational Status and Evaluation of Each Target Site

Code No.	Site Name	[A] Covering population (1,000 unit)	[B] Annual budget 2003 (Thousand KM)	[C] Number of Patients/day	[D] Exams./month	[E] Number of Staff			Result of Evaluations (○ mark means OK)		
						Total of all kind Exams.	No. of all Doctors	Other staffs of DZ	FM※() future plan	Functional condition	Basic Infrastructure
□ Federation of Bosnia and Herzegovina											
FD1	Bosanska Krupa	32.0	2,472	182	8,812	17	107	1	○	○	○
FD2	Velika Kladusa	45.0	3,092		9,800	28	126	2	○	○	○
FD3	Sanski Most	64.0	3,521	250	13,839	25	288	3	○	○	○
FD4	Kladanj	15.4	1,273	340	3,125	9	70	7	○	○	○
FD5	Banovici	28.5	2,192	442	4,996	23	106	7	○	○	○
FD6	Zenica	147.8	8,297	2,500	27,950	97	798	17	○	○	○
FD7	Fojnica	15.0	785	350	1,366	6	36	-	○	○	○
FD8	Visoko	42.3	2,838	200	1,890	36	136	3	○	○	○
FD9	Gorazde	31.8	2,046	500	7,798	22	107	2	○	○	○
FD10	Vitez	28.0	1,528	200	5,930	9	35	4	○	○	○
FD11	Donji Vakuf	13.7	684	180	6,160	9	34	1	○	○	○
FD12	Kiseljak	24.0	1,648	550	3,851	26	66	- (3)	○	○	○
FD13	Jablanica	13.5	1,182	231	1,049	8	55	- (2)	○	○	○
FD14	Citluk	14.7	1,197	230	3,950	9	46	1	○	○	○
FD15	Stolac	13.6	901	150	11,500	17	39	- (6)	○	○	○
FD16	Prozor/ Rama	19.0	1,295	130	1,600	12	44	1	○	○	○
FD17	Tomislavgrad	30.0	1,800	60	12,005	27	131		○	○	○
FD18	Saraj Polje	47.0	2,125	40	3,414	28	74	15	○	○	○
□ Republic of Srpska											
RS1	Banja Luka	240.0	12,976	3,440	14,704	299	579	1	○	○	○
RS2	Srbac	24.0	1,458	186	4,764	20	97	15	○	○	○
RS3	Prijedor	101.6	3,388	1,520	19,200	59	287	2(4)	○	○	○
RS4	Bijeljina	120.0	4,744	966	13,526	60	160	33	○	○	○
RS5	Zvornik	60.0	1,783	385	6,615	36	114	2	○	○	○
RS6	Prnjavor	50.0	1,420	375	7,639	29	111	25`30	○	○	○
RS7	Srebrenica	16.0	410	85	1,210	7	43	-	○	○	○
RS8	Knezevo	14.8	648	112	3,867	8	40		○	○	○
RS9	Srpski Brod	25.0	899	271	4,064	13	82	2	○	○	○
RS10	Samac	22.0	980	157	2,442	19	86	4	○	○	○
RS11	Rogatica	15.0	706	179	1,574	12	48		○	○	○
RS12	Vlasenica	19.0	451	40	235	9	85		○	○	○
□ Brcko											
BR1	Brcko	100.0	4,577.0	300	18,345	32	174		○	○	○
BR2	Maoca	20.0 *		140	2,222	4	21		○	○	○
BR3	Bijela	20.0 *		90	1,425		16		○	○	○

*included budget of Brcko

Based on the above, we concluded that all the 33 DZ, for which request had been made, would be greatly enhanced by supplementing insufficient equipment and renovating inadequate facilities and were finally designated as the target site of this assistance project.

3) Policy on Equipment Planning

The Bosnian implementing agencies, as a result of discussions during the site survey, came up with a final list of equipment to be included in the Project as shown in Table 2-

3 below. The list consists of items related to radiography, laboratory and physiological tests, and emergency care, which are consistent to the priority agendas of the target DZ to improve their diagnostic and emergency care functions, and are comparable to those procured under Phases I and II of this Project. Personal computers, which were included in the original request, were excluded from the Project because of their wide applicability to other purposes and a relatively short life span.

Table 2-3: List of Equipment Finally Requested by the Recipient Side

Code No.	Site Name	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
		RTG apparatus	Film X-ray development machine	Ultrasound	Spirometer	ECC	Biochemistry analyzer	Spectrophotometer	Blood cell counter	Microscope	Centrifuge	Sterilizer	Balance	Destilator	Washing machine for lab. Glassware	Ambulance vehicle	Defibrillator	Reanimation set	Laryngoscope	Aspirator
□ Federation of Bosnia and Herzegovina																				
FD1	Bosanska Krupa	1	1	1	1	2	1	1	1	2	1	3	1	1	1	2	1	1	1	1
FD2	Velika Kladusa	1	1	1	1	4	1	1	1	3	3	5	1	2	1	2	1	3	3	2
FD3	Sanski Most	1	1	2	1	5	1	2	1	2	2	2	1	1	1	2	2	2	1	2
FD4	Kladanj	1	1	1	1	1	1	1	1	1	2	2	2	1	2	1	1	2	1	1
FD5	Banovici		1	1	2	3	1	2	1	2	2	5	2	2	1	1	1	2	2	2
FD6	Zenica	2	2	2	2	1	1	2	1	2	1	2	2	1	2	2	1	4	1	1
FD7	Fojnica	1	1	1	1	2		1	1	1	1	1	1	1	1	1	1	1	1	1
FD8	Visoko	1		1		1			1		1				1	1		4	3	3
FD9	Gorazde	1	1	1		2	1	1	1	1	1	1	1	1	1	1	1	2	1	1
FD10	Vitez			2	3	3	1	1	1	1	1	2	2	2	1	1	2	1	4	2
FD11	Donji Vakuf	1	1	1	1	2	1	1	1	2	1	2	1	1	1	2	1	2	2	1
FD12	Kiseljak	1	1	1	1	1	1			1	1	1		1	1	1	1	1	1	1
FD13	Jablanica	1	1	1	1	1	1	1	1		1	1		1	1	1	1	1	1	
FD14	Citluk	1	1	1	1	2	2	1	2	2	2	7	1	2	1	2	2	2	2	3
FD15	Stolac	1	1	1	1	2		1	1	1	1	2	1	1	1	1	1	1	1	1
FD16	Prozor/ Rama	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	2	2	2
FD17	Tomislavgrad	1	1	2	1	4	1	1	1	2	3	1	1	1	1	2	1	2	3	2
FD18	Saraj Polje	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
SUB. TOTAL		17	17	22	20	38	16	19	18	25	26	40	19	21	20	25	20	34	31	27
□ Republic of Srpska																				
RS1	Banja Luka	3	2	3	2	2	2	1	2	3	2	5	2	2	1	2	4	5	5	2
RS2	Srbac	1	1	1	1	3	1	1	1	3	2	3	1	1	1	1	2	2	2	2
RS3	Prijedor	1	1	1		3	1	2	2	3	3	3	2	1		2	2	2	2	2
RS4	Bijeljina	1	1	2		5	1	2	2	3	3	5		2	1	4	2	3	4	2
RS5	Zvornik	2	2	1	1	6	1	4	2	2	2	2		2	1	2	1	2	3	2
RS6	Prnjavor	1	1	1	1	1	1	2	2	3	2		1	1		1	1	2	1	2
RS7	Srebrenica	1		1		2		1		2		3	1			2	1	1		
RS8	Knezevo	1	1	1		2	1	1	1	2	3	5	1	1	1	1	1	1	1	1
RS9	Srpski Brod	1	1	2	1		1	1	1	2	1	4	1	1		1	2	2	2	6
RS10	Samac	1	1	1		4	1	1	1	3	2	4	1	1		1	2	5	3	2
RS11	Rogatica	1	1	1		1			1	1				1		2		1		1
RS12	Vlasenica	1	1	1		3		2	2	3	3	1	1	1	1	1	1	5	3	3
SUB. TOTAL		15	13	16	6	32	10	18	17	29	23	37	11	14	6	20	19	31	26	25
□ Brcko																				
BR1	Brcko	1	1	3		8	1	1	1	2	2	1	1	1	1	3		3	1	
BR2	Maoca	1	1	1	1	5		1		1	1	1				1		1		
BR3	Bijela		1	1	1	5		1		1	1					1		1		
SUB. TOTAL		2	3	5	2	18	1	3	1	4	4	2	1	1	1	5		5	1	
TOTAL		34	33	43	28	88	27	40	36	58	53	79	31	36	27	50	39	70	58	52

A. Basic Policy on Selecting Equipment

- ① The Equipment Plan shall be formulated based on the 19 equipment items that

were requested finally.

- ② Necessary equipment items and their quantities appropriate for each DZ shall be determined based on the DZ's present status and circumstances, including its role and function in providing PHC in the community, deployment of FM teams and medical staff, emergency system, and operational / maintenance budget.
- ③ Selection of equipment shall reflect the findings of the follow-up survey on the use and maintenance of the equipment provided under Phases I and II.

B. Criteria for Selecting Equipment

Medical equipment to be procured by this Project is divided into the three categories of renewal, replenishment, and new introduction, as further explained below. Specific items and their quantities and specifications are determined based on the principles of priority and exclusivity.

- ① Equipment to be Renewed:
Existing items, the renewal of which is necessary to maintain the medical service capacities of each DZ, will be renewed to the extent it is possible for the DZ to operate and maintain such items within its technical and financial capacities.
- ② Equipment to be Replenished:
Existing items that are qualitatively insufficient will be replenished if such replenishment is deemed effective for enhancing the diagnosis and emergency care functions of the target DZ.
- ③ Equipment to be Newly Introduced:
New items, to which no equivalent exists in the DZ, will be selected to the extent that such items are appropriate to the technical and financial capacities of the DZ so that they can be utilized and maintained effectively.
- ④ Principles of Priority – priority will be given to items that
 1. will be used for standard diagnosis at each DZ,
 2. can be shared by more than one laboratory department, and
 3. will be used for diagnosing a number of common diseases.
- ⑤ Principles of Exclusivity – this Project will exclude items that:
 1. are expendable, or furniture, fixtures, or other fittings,
 2. are widely available locally and can be purchased within the financial capacity of the recipient party,
 3. will incur substantial operational / maintenance costs that are beyond the

- budgetary allowance of the target site,
4. cannot be operated efficiently under the current maintenance system,
 5. are for diagnosing a small number of patients or uncommon diseases,
 6. can be operated only by a limited members of the medical staff, and
 7. are for research or educational purposes.

4) Policy on Facility Renovation Plan

Specific contents of the renovation works were determined based on the following principles:

- ① Renovation works shall be limited to the areas where the equipment to be procured by this Project will be installed.
- ② Specific renovation works shall be determined to ensure the safe operation of the radiological equipment and other items to be procured by this Project based on the survey of the entire facilities of the target sites whether or not the Bosnian side requested such renovation works.
- ③ In order to draw a clear line between the accountabilities of the Japanese side and the Bosnian side, this Project will not execute the type of renovation works that may alter or damage the structures of the existing buildings.
- ④ This project will not execute the kind of renovation works that may encounter unexpected problems, such as the need for re-plumbing or re-wiring, due to unavailability of drawings and other prior information.
- ⑤ From the standpoint of cost effectiveness, this Project will exclude the type of renovation works that can be executed by local contractors at their current technical level and within the financial capacities of the recipient side.
- ⑥ The renovation works shall comply with the medical law, building code, and other applicable laws and regulations of Bosnia and Herzegovina.

(2) Policy on Natural Environment

Bosnia and Herzegovina is located in the center of Balkan Peninsula. Its terrain is mostly mountainous, and the country has hot summers and cold winters, as well as other climatic changes. Nonetheless, these geographic conditions are not severe enough to require additional fixtures or special packaging or carriage methods for the equipment to be procured by this Project. However, transportation of the equipment during January and February should be avoided because many of the main roads

connecting the cities that run through mountainous areas might freeze or be covered with snow.

(3) Policy on Socio-Economic Conditions

Bosnia and Herzegovina consists of two political entities of the Federation of Bosnia and Herzegovina (FBiH) and Republika Srpska (RS), plus an autonomous District of Brcko (BR) and also the nation consists mostly of three ethnic groups. Therefore, implementation of this Project shall take these “different ethics” into the fullest account and make utmost efforts in finding balance among the governments, ethnic groups.

(4) Policy on Procurement and Construction

1) Procurement of Third-Country Products

Third country products will be examined along with Japanese products in case an enough number of Japanese manufacturers are not present to ensure cost competitiveness and equity among the potential suppliers.

2) Procurement of Radiation-Shielding Doors and Windows

Wooden lead-lined doors and doorframes, as well as lead-lined window frames for the control rooms to shield radiation can be custom made by local manufacturers or purchased from neighboring countries. However, leaded glass for the observation windows of the control rooms will be procured from Japan or third countries, as it is not manufactured locally.

3) Building Code and Other Regulations

Our discussions with the Bosnian counterpart confirmed that the renovation works to be executed under this Project would be in small scale and thus would not need to apply for a permit for development or construction works in Bosnia and Herzegovina. However, the alteration of X-ray equipment rooms within the existing facilities would require a permit from the Department of Radiation Protection and Safety under the Bosnian Health Ministry. The Bosnian side is responsible for obtaining such permit and paying associated fees.

(5) Policy on the Employment of Local Contractors

1) Local Agents

Equipment items that will need technical services from the manufacturers or their local agents shall be procured from manufactures that have agents within Bosnia and Herzegovina or in the cities of neighboring countries, such as Zagreb (Croatia), Belgrade (Serbia and Montenegro), and Vienna (Austria).

2) Consultant Firm / Construction Company

The renovation works under this Project will be done at more than a dozen sites in widely scattered locations, but the works themselves will be minor and use local construction methods. Therefore, it is desirable to contract local builders situated near the target sites to execute these works. If the implementing agencies on the Bosnian side are to take charge of such contracting, local consultants and builders will be selected according to the guidelines and procedures of each implementing agency.

(6) Policy on the Operation / Maintenance Capacities of Implementing Agencies

This Project will procure medical equipment mostly to replace existing equipment so as not to significantly increase the maintenance cost. The amount of increase in the maintenance cost after the installation of the equipment during the first year and each subsequent year will be estimated to ascertain whether or not the BiH implementing agencies and target DZ can maintain the equipment

(7) Policy on Determining the Grade of Equipment

The grade of each equipment item to be procured by this Project shall be appropriate for the technical level of the staff members of each target DZ. Expendable supplies for each equipment item should be locally obtainable for easy maintenance. A certain amount of expendables and reagents will be included in the Equipment List to ensure smooth startup and initial operation.

(8) Policy on Procurement / Construction Method and Period

1) Method of Procurement and Ordering

The three implementing agencies of the Federation of Bosnia and Herzegovina (FBiH), Republika Srpska (RS), and the District of Brcko (BR) shall be the parties to procure and order the equipment. Each agency will independently place orders for equipment and installation work with the local agents of Japanese equipment suppliers. The orders for renovation works to be carried out under this Project will not be placed

with Japanese contractors, as the works are minor and can be undertaken by local builders.

2) Policy on Construction Period

A. Possibility of Two Separate Installments

This Project will deliver equipment to 33 sites in two separate installments according to the type of equipment.

① Two Installment Periods Based on Equipment Type

Of the 19 equipment items that were requested, diagnostic x-ray apparatus and film processing machines related to diagnostic imaging will be procured during the first installment period (FY 2004), and laboratory and physiological test equipment will be delivered during the second installment period (FY 2005). Renovation work that is necessary for the installation of each equipment item must be completed prior to the procurement / installation thereof according to the scope of works defined respectively for the Japanese and Bosnian sides.

Contents of Each Installment Period

1st period (FY 2004): X-ray apparatus and film developing machines and renovation work necessary for the installation thereof

2nd period (FY 2005): equipment for ultrasonic diagnosis, physiological / laboratory test, and emergency care and renovation work necessary for the installation thereof

② Benefit of Installing X-Ray Equipment during the 1st Period

Diagnostic imaging using X-ray and ultrasound plays the most important role in diagnosing patients at DZ. In fact, radiology and ultrasonic devices were the top priority items among the 19 items requested by the recipient parties as confirmed during our discussions with each of them. X-ray fluoroscopy and radiography, in particular, are quite effective for the prevention and treatment of common ailments, including malignant neoplasm and other diseases of the respiratory, circulatory, and digestive systems that are prevalent and major causes of death in Bosnia and Herzegovina. Therefore, demand for such apparatus is extremely high. However,

most of the existing general radiography / fluoroscopy X-ray apparatus is 20 to 30 years old, and nearly 60% was assessed as “out of order” or “breaks down frequently.” Aged and insufficient radiology equipment is the major hindrance to the medical activities of DZ.

The status of ultrasonic equipment, which is used for diagnosing medical and gynecological patients, is similar to that of X-ray apparatus. However, the total number of ultrasonic examinations conducted monthly at the 33 DZ was 9,507 whereas that of X-ray examinations was 13,985. The former accounts for slightly over 60% of the latter. Therefore, X-ray apparatus should be given higher priority than ultrasonic equipment in terms of demand, urgency, and benefit.

In view of the above, we have concluded that delivering radiology equipment in the first installment period and laboratory test and emergency care equipment in the second period would be an effective and appropriate approach.

B. Consideration of Implementation Period

Based on the experiences in Phases I and II of this Project, eight to nine months seem sufficient to complete each of the first (FY 2004) and second (FY 2005) installment in the target DZ, which include 18 sites in FBiH that has the largest land area. However, contingencies that could deter the progress of procurement and installation may occur, such as prolonged negotiations with local contractors, delay in customs clearance of imported equipment, paralyzed traffic due to heavy snow or frozen roads, and suspension of work because of delayed preparation on the Bosnian side. To avoid these events, detailed implementation schedule should be carefully and thoroughly examined and formulated as much as possible.

2.2.2 Basic Plan

(1) Equipment Plan

As a result of our Basic Design Study, and based on the list of equipment finally requested by the recipient side, we will draft an Equipment Plan as further described in the paragraphs below. Tables 2-4 to 2-12 attached at the end of this section outline the present status and the quantity to be newly introduced with regard to each equipment item.

1) Radiographic X-Ray Apparatus (See Table 2-4)

While X-ray examinations play a very important role in DZ, most of their equipment is severely antiquated or not functioning properly and cannot produce accurate images..

Each of the 33 DZ we surveyed this time, except FD09 Gorazde, is staffed with a radiologist or radiological technician who conducts radiographic examinations. Most of the existing equipment was made during the former Yugoslavia era. The fluoroscopes are particularly obsolete and problematic, as they could expose technicians to radiation, and the MOH warns the health institutions to restrict the use of such old equipment. Also, the general X-ray machines with expiring tubes cannot produce clear images necessary for accurate diagnosis.

In consideration of the importance of radiology equipment and the present status of each target site, the Equipment Plan shall be formulated to renew the functions of the aged equipment. X-ray equipment will be newly introduced to FD09 Gorazde that does not currently conduct X-ray examinations and refers patients in need of such test to the hospital situated within the same premises. Introduction of X-ray equipment to this site will lessen the financial burden on the patients, because medical services are free of charge at DZ but those at the hospitals are not. Contents of the radiology equipment will consist of general radiography and fluoroscopy apparatus, as were the case in Phases I and II, and will be provided in the following combinations:

Type A: Fluoroscopy table, general X-ray apparatus, control unit, high-voltage generator (1 unit)

Type B: Fluoroscopy table, general X-ray apparatus, control unit, high-voltage generator (2 units)

Type C: Fluoroscopy Table, control unit, high-voltage generator

Type D: General X-ray apparatus, control unit, high-voltage generator

2) X-Ray Film Developing Machine (See Table 2-4)

Film processing machines tend to deteriorate more quickly than other types of equipment due to the use of developing and fixing solutions. Existing machines that have been used for 10 years or so will be replaced with new ones.

3) Policy on Ultrasonic Diagnostic Equipment (See Table 2-5)

As shown in Table 2-5 below, 27 DZ, precluding 3 DZ in FBiH and 3 in RS, are currently equipped with ultrasonic devices as basic equipment. While they play a central role in the DZ's diagnostic services, many of them are obsolete or unfitted with proper probes, as they were second-hand products when supplied as emergency aid shortly after the war ended.

Since the introduction of Family Medicine, more and more family doctors in recent years are participating in training courses on ultrasonic diagnostic imaging not only for their general practice but also for gynecological examinations. The demand for ultrasonic imaging and the technical capability of the target DZ do not differ significantly from site to site. Whether or not to introduce ultrasonic equipment will be decided according to the following guidelines:

- Personnel wise, the institution must be employing at least one full-time gynecologist or medical doctor.
- Institutions that do not employ a full-time doctor but are staffed by a family doctor who can properly use ultrasonic equipment for diagnosis will be provided with such equipment.
- Existing devices that have been used for ten years or longer or those attached with unfit probes will be renewed.

Based on the above criteria, FD08 Visoco, RS07 Srebrenica, BR02 Maoca, and BR03 Bijela, to which new equipment had been introduced recently, were excluded from this Project. Although the existing equipment of RS04 Bijeljina is less than ten years old, an additional unit will be newly procured for this site, because the demand for ultrasonic examinations is very high in this city whose population coverage is the second largest in Sprska, and also because the existing one unit is insufficient to be

shared by multiple departments located in separate buildings within this DZ.

4) Policy on Physiological Function Examination Equipment

A. Spirometer (See Table 2-6)

While lung function test is an essential element of occupational medical examination, spirometers of the target DZ are so severely antiquated that many DZ have discarded them. Since spirometers are necessary for conducting physiological tests for the promotion of family medicine, this Project will supply one spirometer to each target facility that employs a full-time respiratory doctor or a family doctor who has completed a training course.

B. ECG (See Table 2-6)

At the target DZ, electrocardiography is conducted mostly on medical and pediatric patients. Some DZ own more than one ECG machine to meet the demand for such test. This Project will replace aged existing ECG equipment that has been used for more than ten years. However, certain DZ that have a less-than-10-year-old ECG machine will be supplemented with a new unit if the DZ's current demand for such test justifies the possession of more than one machine. .

5) Policy on Laboratory Test Equipment

All the items requested for this Project are basic laboratory equipment and can be used and maintained by the existing personnel within the technical and financial capacities of each DZ. Based on the status of the laboratory tests and the existing equipment of each site, the quantity to procure for each DZ is determined and outlined in Table 2-8.

A. Equipment Directly Used for Examinations

○ Biochemistry Analyzer (See Table 2-7)

The biochemistry analyzer to be procured by this Project shall be an automatic type that can process a large number of specimens efficiently by using generic reagents. Use of this type of analyzer will be effective in DZ that regularly conduct a large number of tests. Therefore, the criteria below shall be applied to the selection of the target DZ for which the equipment will be provided:

- This item will be procured for the institutions whose population coverage is

30,000 or larger and the number of biochemical tests is 5,000 or more per month.

• Institutions, to which the above is applicable, will be excluded from this Project, if they own new equipment.

○ **Spectrophotometer (See Table 2-7)**

Manual-type spectrophotometer will be procured for the DZ that do not satisfy the above criteria but meet the conditions described below. DZ that will be provided with biochemistry analyzers and currently have more-than-10-years-old spectrophotometers will be supplied with new spectrophotometers for emergency uses.

• This item will be procured for the site whose equipment is 10 or more years old or that was donated second-hand equipment.

○ **Blood Cell Counter (See Table 2-8)**

Blood cell counter is used frequently and thus wear out quickly. Many DZ that regularly conduct many tests possess more than one blood cell counter. This Project will procure one unit for each of the DZ that satisfies the following criteria. Old units that tend to malfunction often will also be replaced.

• This item will be procured for the site whose equipment is 10 or more years old or that was donated second-hand equipment.

○ **Microscope (See Table 2-8)**

In laboratories, separate microscopes are usually used for biochemical, hematological, and bacteriological tests, with each technician using one microscope. Based on the number of technicians at each site, this Project will provide the microscope to the site having zero or one microscope that is less than 10 years old, which is not enough to conduct necessary tests.

B. Other Peripheral Equipment

○ **Centrifuge, Balance, Sterilizer, Distiller (See Table 2-9, Table 2-10)**

Generally, more than one centrifuges and sterilizers are used at each site to produce high-quality specimens and prevent infection. Accurate and properly functioning balance and distiller are necessary for the preparation of reagents and production of distilled water for testing. This Project will supply at least one each of these items to each DZ having zero or one each of these items that are less than

10 years old, which is inadequate for making necessary specimens.

○ **Washing Machine for Lab Glassware (See Table 2-11)**

- The effect of providing the washing machine varies depending on the number of specimens processed at the site. Thus, this item will be procured for the site whose population coverage is 30,000 or larger and the number of biochemical tests is 5,000 or more per month.

6) Policy on Emergency Care Equipment

A. Ambulance Vehicle (See Table 2-12)

Most of the medical vehicles currently owned by the DZ have been used for more than ten years and tend to break down frequently. Also, as many of them are sedans or station wagons, inside which performing emergency maneuvers on patients is difficult. The emergency departments of DZ that have at least one emergency vehicle are sufficiently staffed and equipped with radio systems, etc., except that the ambulance cars are in poor condition or quantitatively deficient. Therefore, this Project will procure enough number of ambulance vehicles to ensure that each DZ will have an ambulance car that can transfer emergency patients swiftly and safely. Also, since the ambulance vehicles will be used to transfer patients to DZ or from DZ to higher-level medical institutions, they should be one-box type cars, inside which the patient can lie down with a doctor or nurse standing by him/her to give oxygen, drip infusion, or other minimum care. The quantity to be procured for each site is listed in Table 2-12.

B. Defibrillator, Reanimation Set, Laryngoscope, Aspirator (See Table 2-12)

One each of these items will be provided for each DZ unless their existing equipment has been recently procured.

Table 2-4: X-Ray Equipment and Film Developing Machine

Code No.	Site Name	Outline of DZ				RTG apparatus							Film X-ray development machine				
		Population (1,000)	Patients/day	No. of staff (Visiting)		No. of Exams./Month	Condition of existing RTG apparatus(*1)				New equipment plan under the Project			Condition of existing machine(*1)		New plan under the Project	
				Radiology Dept.			Graphie	Scopie	Graphie /Scopie	Others	Graphie	Scopie	Type	Autom. type	Manual type		
				Dr.	Tech												
□ Federation of Bosnia and Herzegovina																	
FD1	Bosanska Krupa	32.0	182	1	3	383	△(30)	×(30)				○	○	A	△(8)		○
FD2	Velika Kladusa	45.0	200		2	300	○(5)					-	○	C	△(10)		○
FD3	Sanski Most	64.0	250	1	4	896	△(30)	×(30)				○	○	A	×(10) ○(10)		○
FD4	Kladanj	15.4	340		1	na	×(20)	×(20)				○	○	A	×(?)		○
FD5	Banovici	28.5	442		2	388			○(1)			-	-	-	△(8)		○
FD6	Zenica	147.8	2,500	1	3	1,250	△(30)		○(25) ×(25)	Odelca ○(20)		○	○	A	×(20) ○(14)		○
FD7	Fojnica	15.0	350	(1)	1	90	△(25)					○	-	D	△(8)		○
FD8	Visoko	42.3	200	2	4	80	○(25)	○(7)				-	○	C	○(7)		○
FD9	Gorazde	31.8	500	(1)	(1)	(*)						○	-	D	-		○
FD10	Vitez	28.0	200	1	1	400	○(1)			Mamma ○(4)		-	-	-	○(1)		○
FD11	Donji Vakuf	13.7	180		1	280	○(20)	×(15)				○	○	B	△(30)		○
FD12	Kiseljak	24.0	550	1	2	902	×(?)					○	○	B	○(10)		○
FD13	Jablanica	13.5	231		3	68	○(30)	×(30)				○	-	D	×(20)		○
FD14	Citluk	14.7	230		1	(*)	×(20)	×(20)				○	○	A	×(20) △(20)		○
FD15	Stolac	13.6	150	1	2	900	○(30)	×(30)				○	-	D		○	○
FD16	Prozor/Rama	19.0	130		2	200			△(15)			○	○	A	△(15)		○
FD17	Tomislavgrad	30.0	60	1	4	600	○(*4)	×(*4)				○	○	A	○(8)		○
FD18	Saraj Polje	47.0	40		1	1,200				Odelca ○(10)		○	-	D		○	○
SUB. TOTAL		625.3	6,735	9	37	7,937	14	9	4	3	14	11			18	2	16
□ Republic of Srpske																	
RS1	Banja Luka	240.0	3,440	3	7	734	△(25)					○	○	B	△(20)		○
RS2	Srbac	24.0	186		1	280	○(30)	×(30)				○	○	A	△(6)		○
RS3	Prijedor	101.6	1,520	1	3	1,000	△(20)	△(20)		Odelca ○(20)		○	○	B		○	○
RS4	Bijeljina	120.0	966	1	3	477	△(14)	×(14)				-	○	C	○(3)		○
RS5	Zvornik	60.0	385	1	4	(*)						○	○	B	-		○
RS6	Prnjavor	50.0	375	1	1	319	○(30)	○(30)		Mamma ○(10)		○	○	A	△(2)		○
RS7	Srebrenica	16.0	85		2	264	○(15)	×(15)				○	-	D	?(1)		○
RS8	Knezevo	14.8	112		1	413	○(10)	×(10)				○	○	A		○	○
RS9	Srpski Brod	25.0	271	1	1	1,651	○(*5) ×(14)	×(14)				○	○	A	○(10)		○
RS10	Samac	22.0	157	1	1	137	○(15)	○(15)				○	○	A	△(10)		○
RS11	Rogatica	15.0	179		2	138	△(20)					○	-	D		○	○
RS12	Vlasenica	19.0	40		1	na	○(14)	×(14)				○	-	D	○(2)		○
SUB. TOTAL		707.4	7,716	9	27	5,413	11	9	2	11	9				8	3	9
□ Brcko																	
BR1	Brcko	100.0	300	1	1	593	○(22)	○(22)		Odelca ○(22)		○	○	A	○(3)		○
BR2	Maoca	20.0	140		1	31	△(25) (*3)					○	-	C	○(2)		○
BR3	Bijela	20.0	90		1	11	○(20)	○(20)				-	-	-	△(10)		○
SUB. TOTAL		140.0	530	1	3	635	3	2	1	2	1				3		1
TOTAL		1,472.7	14,981	19	67	13,985	29	20	4	3	27	21			29	5	26

(*1) ○...Working, △...Often in trouble, ×...Not working

() is indicating of age of use

(*2) Patients are sent to secondary health facility for photograph

(*3) Mobile type

(*4) Secondhand equipment which is unidentified age of use (very old)

Table 2-5: Ultrasound Equipment

Code No.	Site Name	Outline of DZ					Ultrasound				
		Population (1,000)	Patients /day	No. of Staff () is Visiting staff			No. of Exam./ Month	Condition of existing app.(*1)		No. of apparatus	
				Gyne.	Int'l Med.	FM		Condi on of existing appa. (*1)	Remarks	Request	Plan
□Federation of Bosnia and Herzegovina											
FD1	Bosanska Krupa	32.0	182	1	1	1	157	○(10)		1	1
FD2	Velika Kladusa	45.0	200	2	3	2		○(3) ×(20)		1	1
FD3	Sanski Most	64.0	250	4	5	3	-			2	1
FD4	Kladanj	15.4	340	2	1	7	-			1	1
FD5	Banovici	28.5	442	1	1	7	72	△(20)		1	1
FD6	Zenica	147.8	2,500	4	9	17	690	○(15) ○(19)		2	1
FD7	Fojnica	15.0	350	1	1	-	48	×(15)	Bad Prob.	1	1
FD8	Visoko	42.3	200	3	2	3	160	○(1)		1	
FD9	Gorazde	31.8	500			2	25			1	1
FD10	Vitez	28.0	200	1	1	4	30	×(12)	Bad Monitor	2	1
FD11	Donji Vakuf	13.7	180	1		1	2,400	○(20)		1	1
FD12	Kiseljak	24.0	550	2	2	- (3)	112	×(19)	Bad Prob.	1	1
FD13	Jablanica	13.5	231			- (2)	45	○(*2)		1	1
FD14	Citluk	14.7	230	1	1	1	-	×(20)		1	1
FD15	Stolac	13.6	150	1	1	- (6)	900	△(20)		1	1
FD16	Prozor/ Rama	19.0	130	1	1	1	200	×(15)		1	1
FD17	Tomislavgrad	30.0	60	1	1		175	○(25)		2	1
FD18	Saraj Polje	47.0	40		2	15				1	1
SUB. TOTAL		625.3	6,735	26	32	64	5,014	16		22	17
□Republic of Srpska											
RS1	Banja Luka	240.0	3,440	88	3	1	2,108	○(1) ○(3) ○(15)		3	1
RS2	Srbac	24.0	186	1	2	15	204	×	Bad Prob.	1	1
RS3	Prijedor	101.6	1,520			2(4)				1	1
RS4	Bijeljina	120.0	966	4		33	218	○(5)		2	1
RS5	Zvornik	60.0	385	2		2	212		Share w/Hosp.	1	1
RS6	Prnjavor	50.0	375	2	2	25-30	63	×(8)	Bad Prob.	1	1
RS7	Srebrenica	16.0	85	1	1	-	426	○(1)		1	
RS8	Knezevo	14.8	112	1						1	1
RS9	Srpski Brod	25.0	271	1	1	2	648	○(20)		2	1
RS10	Samac	22.0	157	1		4		×(7)		1	1
RS11	Rogatica	15.0	179	1			91	△(15)		1	1
RS12	Vlasenica	19.0	40	1			60	○(*2)		1	1
SUB. TOTAL		707.4	7,716	103	9	57	4,030	11		16	11
□Brcko											
BR1	Brcko	100.0	300	2	3		292	○(3) ○(3)		3	1
BR2	Maoca	20.0	140		3		131	○(2)		1	
BR3	Bijela	20.0	90				40	○(2)		1	
SUB. TOTAL		140.0	530	2	6		463	4		5	1
TOTAL		1,472.7	14,981	131	47	121	9,507	31		43	29

(*1) ○...Working, △...Often in trouble, ×...Not working

() is indicating age of use

(*2) Secondhand equipment which is unidentified age of use (very old)

Table 2-6: Spirometer / ECG

Code No.	Site Name	Outline of DZ				Spirometer				ECG			
		Population (1,000)	Patients /day	No. of Staff () Visiting		Condition of existin g (*1)	Number of apparatus		No. of exam./ Month	Condition of existing (*1)	Remarks	Number of apparatus	
				Respi ratory Doc.	FM		Request	Plan				Request	Plan
□ Federation of Bosnia and Herzegovina													
FD1	Bosanska Krupa	32.0	182	1	1	△(5)	1	1	408	○(4) ○(20)		2	1
FD2	Velika Kladusa	45.0	200	1	2		1	1		○(4) ○(8) ○(30)		4	1
FD3	Sanski Most	64.0	250	1	3	△(4)	1	1	579	○(10)		5	1
FD4	Kladanj	15.4	340	1	7		1	1		○(8) ○(20)		1	1
FD5	Banovici	28.5	442	1	7	△(10)	2	1	827	○(4) ○(20)		3	1
FD6	Zenica	147.8	2,500	2	17	△(6) △(20)	2	1	3,000	○(2) ○(2) ○(3)		1	1
FD7	Fojnica	15.0	350	(1)			1	1	56	○(10) ○(10)		2	1
FD8	Visoko	42.3	200	1	3				40	(8)	1no. at ER	1	1
FD9	Gorazde	31.8	500	1	2	△(15)			50	(8)	1no. at ER	2	1
FD10	Vitez	28.0	200	1	4		3	1	300	(8)	1no. at OPD & ER	3	1
FD11	Donji Vakuf	13.7	180		1		1	1	250	○(8)		2	1
FD12	Kiseljak	24.0	550	1	(3)		1	1	300	○(10)		1	1
FD13	Jablanica	13.5	231	1	(2)		1	1	126	○(10) ○(8) ○(8)		1	1
FD14	Citluk	14.7	230		1	×(2)	1	1	500	○(4)		2	
FD15	Stolac	13.6	150		(6)		1	1	1,700	○(8) ○(10)		2	1
FD16	Prozor/ Rama	19.0	130		1		1	1	300	(9)	1no. at OPD & ER	1	
FD17	Tomislavgrad	30.0	60	1		○(5)	1	1	230	○(8)		4	1
FD18	Saraj Polje	47.0	40		15		1	1	405	○(3) ○(4)		1	
SUB. TOTAL		625.3	6,735	13	64	8	20	16	9,071	26		38	15
□ Republic of Srpska													
RS1	Banja Luka	240.0	3,440	4	1	○(15)	2	1	2,862	(8)	1no. at OPD & ER	2	1
RS2	Srbac	24.0	186	1	15		1	1	80	○(*2)		3	1
RS3	Prijedor	101.6	1,520	2	2(4)				100	○(5)	1no. at ER	3	1
RS4	Bijeljina	120.0	966	1	33	○(1)			750	(10)	1no. at ER	5	1
RS5	Zvornik	60.0	385	1	2		1	1	713	(8)	1no. at ER	6	1
RS6	Prnjavor	50.0	375	1	25~30		1	1	250	(8)	1no. at ER	1	1
RS7	Srebrenica	16.0	85	1								2	1
RS8	Knezevo	14.8	112	1					99	○(5) ○(10)		2	1
RS9	Srpski Brod	25.0	271	1	2		1	1	97	○(5) ○(10)			
RS10	Samac	22.0	157	1	4				80	○(24)		4	1
RS11	Rogatica	15.0	179						85	○(10)		1	1
RS12	Vlasenica	19.0	40	1					75	○(20)		3	1
SUB. TOTAL		707.4	7,716	15	57		6	5	5,191	9		32	11
□ Brcko													
BR1	Brcko	100.0	300	2		○(3)			960	○(3) ○(4)		8	1
BR2	Maoca	20.0	140				1	1	230	○(4)		5	1
BR3	Bijela	20.0	90				1	1	174	○(3)		5	1
SUB. TOTAL		140.0	530	2			2	2	1,364	4		18	3
TOTAL		1,472.7	14,981	30	121		28	23	15,626	39		88	29

(*1) ○...Working, △...Often in trouble, ×...Not working

() is indicating age of use

(*2) Secondhand equipment which is unidertified age of use (very old)

Table 2-7: Biochemistry Analyzer / Spectrophotometer

Code No.	Site Name	Outline of DZ			Biochemistry analyzer				Spectrophotometer		
		Population (1,000)	Patients/day	No. of staff	No. of exam./Month	Condition of existing apparatus (*1)	Number of apparatus		Condition of existing apparatus (*1)	Number of apparatus	
				() Visiting Tech.			Request	Plan		Request	Plan
□ Federation of Bosnia and Herzegovina											
FD1	Bosanska Krupa	32.0	182	6	2,988	△(8)	1	1	○(5) ×(5)	1	
FD2	Velika Kladusa	45.0	200	3	4,000		1	1	○(4) ×(30)	1	
FD3	Sanski Most	64.0	250	7	3,579	×	1	1	○(8)	2	1
FD4	Kladanj	15.4	340	3	2,492	○(4)	1		○(1)	1	
FD5	Banovici	28.5	442	7	2,032		1		○(10)	2	1
FD6	Zenica	147.8	2,500	36	16,560	○(1)○(6) ○(10)	1		○(5)○(6) ○(7)○(8)	2	
FD7	Fojnica	15.0	350	3	745				○(7)	1	1
FD8	Visoko	42.3	200	6	110	○(2)			○(10)		
FD9	gorazde	31.8	500	6	2,096		1	1	○(5)	1	
FD10	Vitez	28.0	200	5	1,200		1		○(10)	1	1
FD11	Donji Vakuf	13.7	180	2	2,000		1		○(10)	1	1
FD12	Kiseljak	24.0	550	4	1,184		1		○(20) ○(20)		1
FD13	Jablanica	13.5	231	4	436		1		○(12)	1	1
FD14	Citluk	14.7	230	6	1,150	○(1)	2		○(10)	1	1
FD15	Stolac	13.6	150	2	5,000				○(10)	1	1
FD16	Prozor/Rama	19.0	130	4	400		1		○(10)	1	1
FD17	Tomislavgrad	30.0	60	8	5,000	○(12)	1	1	○(19)	1	1
FD18	Saraj Polje	47.0	40	5	72		1			1	1
SUB. TOTAL		625.3	6,735	117	51,044		16	5		19	12
□ Republic of Srpske											
RS1	Banja Luka	240.0	3,440	56	4,000	○(4) ×(9)	2	1	○(1)	1	
RS2	Srbac	24.0	186	5	2,100		1		○(1)	1	1
RS3	Prijedor	101.6	1,520	19	11,000	○(2)	1		○(2) ○(2)	2	
RS4	Bijeljina	120.0	966	10	4,326		1	1	○(3) ○(3) ○(5)	2	
RS5	Zvornik	60.0	385	7	2,890		1	1	Share w/Hosp.	4	1
RS6	Prnjavor	50.0	375	5	3,269		1	1	○(12)	2	1
RS7	Srebrenica	16.0	85	4					○(2)	1	
RS8	Knezevo	14.8	112	2	1,272		1		○(25)	1	1
RS9	Srpski Brod	25.0	271	3	683		1		○(4)	1	1
RS10	Samac	22.0	157	6	890		1		○(3) ×(10)	1	
RS11	Rogatica	15.0	179	2	380				○(7)		
RS12	Vlasenica	19.0	40	8	100	○(2)			○(1)	2	
SUB. TOTAL		707.4	7,716	127	30,910		11	10		11	18
□ Brcko											
BR1	Brcko	100.0	300	5	292		1	1		1	1
BR2	Maoca	20.0	140	2	131				○(3)	1	
BR3	Bijela	20.0	90	1	40				○(4)	1	
SUB. TOTAL		140.0	530	8	463		1	1		3	1
TOTAL		1,472.7	14,981	252	82,417		11	27		11	40

(*1) ○...Working, △...Often in trouble, ×...Not working
() is indicating age of use

Table 2-8: Blood Cell Counter / Microscope

Code No.	Site Name	Outline of DZ			Blood cell counter				Microscope		
		Population (1,000)	Patients/day	No. of staff	No. of exam./Month	Condition of existing apparatus (*1)	Number of apparatus		Condition of existing apparatus (*1)	Number of apparatus	
				Tech.			Request	Plan		Request	Plan
□ Federation of Bosnia and Herzegovina											
FD1	Bosanska Krupa	32.0	182	6	4,876	○(2) ×(2)	1		○(10)○(10) ○(15)	2	2
FD2	Velika Kladusa	45.0	200	3	5,500	○(1)	1		○(20)○(20)	3	1
FD3	Sanski Most	64.0	250	7	8,785	○(2) ×(2)	1	1	○(3)○(8)	2	
FD4	Kladanj	15.4	340	3	633	○(4) ○(8)	1		○(10)	1	1
FD5	Banovici	28.5	442	7	1,677	○(6)	1		△(20)	2	1
FD6	Zenica	147.8	2,500	36	6,450	○(6) ×(6)	1	1	○(7)○(8) ○(8)	2	
FD7	Fojnica	15.0	350	3	427	×(8)	1	1	△(10)	1	1
FD8	Visoko	42.3	200	6	1,500	△(10)	1	1	○(10)		
FD9	Gorazde	31.8	500	6	5,627	○(5)	1	1	○(10)	1	1
FD10	Vitez	28.0	200	5	4,000	○(2)	1		○(3)○(7)	1	
FD11	Donji Vakuf	13.7	180	2	1,230		1	1	○(8)	2	
FD12	Kiseljak	24.0	550	4	1,353				○(10)○(10)	1	1
FD13	Jablanica	13.5	231	4	374		1	1	○(8)		
FD14	Citluk	14.7	230	6	2,300	○(8)	2	1	○(15)	2	1
FD15	Stolac	13.6	150	2	3,000	△(10)	1	1	○(10)	1	1
FD16	Prozor/ Rama	19.0	130	4	500	○(10)	1	1	○(7)	1	
FD17	Tomislavgrad	30.0	60	8	6,000	○(12)	1	1	○(10)	2	1
FD18	Saraj Polje	47.0	40	5	1,737	○(4)	1		○(4)	1	
SUB. TOTAL		625.3	6,735	117	55,969		18	11		25	11
□ Republic of Srpska 0.0											
RS1	Banja Luka	240.0	3,440	56	5,000	○(1) △(5)	2	1	○(10, 10, 10)	3	1
RS2	Srbac	24.0	186	5	2,100	△(4)	1	1	○(1)○(10) ○(10)	3	
RS3	Prijedor	101.6	1,520	19	7,100	○(5)used	2	1	△(10)△(10) △(10)	3	1
RS4	Bijeljina	120.0	966	10	7,755	○(1) ×(8)	2	1	○(1)○(10)○ (10)	3	1
RS5	Zvornik	60.0	385	7	2,800	Share w/ Hosp.	2	1	Share w/Hosp.	2	1
RS6	Prnjavor	50.0	375	5	3,738	△(8)	2	1	○(10)○(10)	3	1
RS7	Srebrenica	16.0	85	4	520	×(1)			○(3)	2	
RS8	Knezevo	14.8	112	2	2,083		1	1	○(5)○(15)	2	1
RS9	Srpski Brod	25.0	271	3	985		1	1	○(15)	2	1
RS10	Samac	22.0	157	6	1,335	×(10)	1	1	○(10)○(10) ○(10)	3	1
RS11	Rogatica	15.0	179	2	880	○(7)	1	1	○(10)	1	1
RS12	Vlasenica	19.0	40	8	280	△(8)	2	1	○(30)○(30)	2	1
SUB. TOTAL		707.4	7,716	127	34,576		11	11		11	10
□ Brcko											
BR1	Brcko	100.0	300	5	292	○(2)○(3) ○(3)	1		○(4)○(4)	2	1
BR2	Maoca	20.0	140	2	131	○(3)			○(3)	1	1
BR3	Bijela	20.0	90	1	40	○(4)			○(7)	1	1
SUB. TOTAL		140.0	530	8	463		1	0		4	3
TOTAL		1,472.7	14,981	252	91,008		36	22		58	24

(*1) ○...Working, △...Often in trouble, ×...Not working
() is indicating age of use

Table 2-9: Centrifuge / Sterilizer

Code No.	Site Name	Outline of DZ			Centrifuge			Steriliser		
		Population (1,000)	Patients/Day	No. of staff Tech.	Condition of existing apparatus(*1)	No. of apparatus		Condition of existing apparatus(*1)	No. of apparatus	
						Request	Plan		Request	Plan
□ Federation of Bosnia and Herzegovina										
FD1	Bosanska Krupa	32.0	182	6	○(3)○(10)	1	1	○(10)○(10)×(10)	3	1
FD2	Velika Kladusa	45.0	200	3	○(10)×(10)	3	1	○(20)×(30)	5	1
FD3	Sanski Most	64.0	250	7	○(4)○(20) ○(30)	2	1	○(20)×(30) 2no. of others	2	1
FD4	Kladanj	15.4	340	3	×(20)×(20)	2	1	○(20)×(30)	2	1
FD5	Banovici	28.5	442	7	○(10)○(10)	2	1	○(30)4no. Of others	5	1
FD6	Zenica	147.8	2,500	36	○(7)○(8) ×(11)	1	1	○(7)○(12) 2no. of others	2	1
FD7	Fojnica	15.0	350	3	○(10)	1	1	○(10)	1	1
FD8	Visoko	42.3	200	6	○(10)	1	1	○(10)○(10)		
FD9	Gorazde	31.8	500	6	○(10)○(10)	1	1	○(15)	1	1
FD10	Vitez	28.0	200	5	○(10)	1	1	○(13)	2	1
FD11	Donji Vakuf	13.7	180	2	○(8)×(10)	1	1	○(5)	2	
FD12	Kiseljak	24.0	550	4	○(15)×(40)	1	1	○(20)×(20)	1	1
FD13	Jablanica	13.5	231	4	○(7)×(20)	1	1	○(20)×(20)	1	1
FD14	Citluk	14.7	230	6	○(10)○(20)	2	1	○(20)△(20)	7	1
FD15	Stolac	13.6	150	2	△(10)	1	1	○(10)○(10)	2	1
FD16	Prozor/Rama	19.0	130	4	○(10)	1	1	○(10)	2	1
FD17	Tomislavgrad	30.0	60	8	○(10)	3	1	○(20)×(20)	1	1
FD18	Saraj Polje	47.0	40	5	○(3)	1	1	○(3)	1	1
SUB. TOTAL		625.3	6,735	117		26	18		40	16
□ Republic of Srpska										
RS1	Banja Luka	240.0	3,440	56	○(7)○(10)	2	1	△(10)△(15)	5	1
RS2	Srbac	24.0	186	5	△(8)△(30) △(30)	2	1	○(5)○(30)×(30)	3	1
RS3	Prijedor	101.6	1,520	19	△(10)	3	1	○(10)	3	1
RS4	Bijeljina	120.0	966	10	○(7)	3	1	○(7)	5	1
RS5	Zvornik	60.0	385	7	Share w/Hosp.	2	1		2	1
RS6	Prnjavor	50.0	375	5	○(20)	2	1	○(20)○(20)		
RS7	Srebrenica	16.0	85	4	○(1)○(10) ×(10)	0		△(10)△(10)	3	1
RS8	Knezevo	14.8	112	2	○(5)○(10) ○(30)	3	1	○(5)○(15)×(15)	5	1
RS9	Srpski Brod	25.0	271	3	○(2)×(5)	1	1	○(20)×(15)	4	
RS10	Samac	22.0	157	6	○(8)×(10) 2no. of others	2	1	○(10)	4	1
RS11	Rogatica	15.0	179	2	○(10)	0		○(10)		
RS12	Vlasenica	19.0	40	8	○(20)×(30)	3	1	○(3)○(30)	3	1
SUB. TOTAL		707.4	7,716	127		11	23	10	37	9
□ Brcko										
BR1	Brcko	100.0	300	5	○(8)	2	2	○(10)	1	1
BR2	Maoca	20.0	140	2	○(5)	1	1	○(5)	1	1
BR3	Bijela	20.0	90	1	○(7)	1	1	○(20)		
SUB. TOTAL		140.0	530	8		4	4		2	2
TOTAL		1,472.7	14,981	252		11	53	32	0	79

(*1) ○...Working, △...Often in trouble, ×...Not working
() is indicating age of use

Table 2-10: Balance / Distiller

Code	Name of DZ	Outline of DZ			Balance			Destillator		
		Population (1,000)	Paitients/day	No. of staff Tech.	Condition of existing apparatus(*1)	No. of apparatus Request	Plan	Condition of existing apparatus(*1)	No. of apparatus Request	Plan
□ Federation of Bosnia and Herzegovina										
FD1	Bosanska Krupa	32.0	182	6		1	1	○(20)	1	1
FD2	Velika Kladusa	45.0	200	3	○(10)	1	1	○(30)	2	1
FD3	Sanski Most	64.0	250	7	○(3)	1	1	○(20)	1	1
FD4	Kladanj	15.4	340	3		2	1	×	1	1
FD5	Banovici	28.5	442	7	○(10)	2	1	○(30)	2	1
FD6	Zenica	147.8	2,500	36	○(13)	2	1		1	1
FD7	Fojnica	15.0	350	3		1	1		1	1
FD8	Visoko	42.3	200	6						
FD9	Gorazde	31.8	500	6		1	1		1	1
FD10	Vitez	28.0	200	5		2	1		2	1
FD11	Donji Vakuf	13.7	180	2		1	1		1	1
FD12	Kiseljak	24.0	550	4	○(5)			○(30)	1	1
FD13	Jablanica	13.5	231	4				○(30)	1	1
FD14	Citluk	14.7	230	6	○(5)	1	1	○(25)	2	1
FD15	Stolac	13.6	150	2	△(8)	1	1	○(15)	1	1
FD16	Prozor/ Rama	19.0	130	4		1	1		1	1
FD17	Tomislavgrad	30.0	60	8		1	1	○(30)	1	1
FD18	Saraj Polje	47.0	40	5		1	1		1	1
SUB. TOTAL		625.3	6,735	117		19	15		21	17
□ Republic of Srpska										
RS1	Banja Luka	240.0	3,440	88		2	1	△(10)	2	1
RS2	Srbac	24.0	186	1		1	1	○(8)	1	1
RS3	Prijedor	101.6	1,520		△(15)	2	1	○(15)	1	1
RS4	Bijeljina	120.0	966	4				○(10)	2	1
RS5	Zvornik	60.0	385	2					2	1
RS6	Prnjavor	50.0	375	2		1	1	○(30)	1	1
RS7	Srebrenica	16.0	85	1		1	1	○(10)		
RS8	Knezevo	14.8	112	1		1	1	○(30)	1	1
RS9	Srpski Brod	25.0	271	1	○(5)	1	1	×(20)	1	1
RS10	Samac	22.0	157	1		1	1	○(10)	1	1
RS11	Rogatica	15.0	179	1					1	1
RS12	Vlasenica	19.0	40	1		1	1	○(30)	1	1
SUB. TOTAL		707.4	7,716	103	11	11	9		14	11
□ Brcko										
BR1	Brcko	100.0	300	2	○	1	1	○(15)	1	1
BR2	Maoca	20.0	140		○			○(2)		
BR3	Bijela	20.0	90							
SUB. TOTAL		140.0	530	2		1	1		1	1
TOTAL		1,472.7	14,981	222	11	31	25	0	36	29

(*1) ○···Working, △···Often in trouble, ×···Not working
() is indicating age of use

Table 2-11: Washing Machine for Lab Glassware

Code No.	Site Name	Outline of DZ				Washing machine for lab. Glassware	
		Population (1,000)	Patients/day	No. of staff Technician	No. of existing biochemistry analyzer	No. of apparatus Request	Plan
□ Federation of Bosnia and Herzegovina							
FD1	Bosanska Krupa	32.0	182	6	1	1	1
FD2	Velika Kladusa	45.0	200	3	1	1	1
FD3	Sanski Most	64.0	250	7	1	1	1
FD4	Kladanj	15.4	340	3		2	
FD5	Banovici	28.5	442	7		1	
FD6	Zenica	147.8	2,500	36		2	1
FD7	Fojnica	15.0	350	3		1	
FD8	Visoko	42.3	200	6		1	
FD9	Gorazde	31.8	500	6	1	1	1
FD10	Vitez	28.0	200	5		1	
FD11	Donji Vakuf	13.7	180	2		1	
FD12	Kiseljak	24.0	550	4		1	
FD13	Jablanica	13.5	231	4		1	
FD14	Citluk	14.7	230	6		1	
FD15	Stolac	13.6	150	2		1	
FD16	Prozor/ Rama	19.0	130	4		1	
FD17	Tomislavgrad	30.0	60	8	1	1	1
FD18	Saraj Polje	47.0	40	5		1	
SUB. TOTAL		625.3	6,735	117		20	6
□ Republic of Srpska							
RS1	Banja Luka	240.0	3,440	56	1	1	1
RS2	Srbac	24.0	186	5		1	
RS3	Prijedor	101.6	1,520	19			
RS4	Bijeljina	120.0	966	10	1	1	1
RS5	Zvornik	60.0	385	7	1	1	1
RS6	Prnjavor	50.0	375	5	1		
RS7	Srebrenica	16.0	85	4			
RS8	Knezevo	14.8	112	2		1	
RS9	Srpski Brod	25.0	271	3			
RS10	Samac	22.0	157	6			
RS11	Rogatica	15.0	179	2			
RS12	Vlasenica	19.0	40	8		1	
SUB. TOTAL		707.4	7,716	127		6	3
□ Brcko							
BR1	Brcko	100.0	292	5	1	1	1
BR2	Maoca	20.0	131	2			
BR3	Bijela	20.0	40	1			
SUB. TOTAL		140.0	463	8		1	1
TOTAL		1,472.7	14,914	252		27	10

Table 2-12: Emergency Care Equipment

Code No.	Site Name	Outline of DZ		Ambulance vehicle				Defibrillator		Reanimation set		Laryngo scope		Aspirator			
		Population (1,000)	Patient s/day	Condition of existing vehicle(*1)	Remarks	No. of vehicle		Condition of existing apparatus (*1)	No. of apparatus		No. of apparatus		No. of apparatus				
						Requ est	Plan		Requ est	Plan	Requ est	Plan	Requ est	Plan			
□ Federation of Bosnia and Herzegovina																	
FD1	Bosanska Krupa	32.0	182	○(8)	×(8)			2	1		1	1	1	1	1	1	
FD2	Velika Kladusa	45.0	200	○(14) ○(15)				2	1	○(4) ○(?)	1		3	1	3	1	2
FD3	Sanski Most	64.0	250	○(10) ○(20)	×	Wagonx1		2	1		2	1	2	1	1	2	1
FD4	Kladanj	15.4	340	○(10) ○(9)	×	Wagonx1		1	1		1	1	2	1	1	1	1
FD5	Banovici	28.5	442	○(2) ○(4)				1		○(10)	1	1	2	1	2	1	2
FD6	Zenica	147.8	2,500	○(3)○(3) ○(4)				2		○(2)	1		4	1	1	1	1
FD7	Fojnica	15.0	350	○(15)		Wagonx1		1	1		1	1	1	1	1	1	1
FD8	Visoko	42.3	200	○(2)○(2)		Wagonx1		1	1	○(6)			4	1	3	1	3
FD9	Gorazde	31.8	500	○(3)	×	×(15)		1	1	○(15)	1	1	2	1	1	1	1
FD10	Vitez	28.0	200	○(7) ○(10)		Sedanx2		1	1		2	1	1	1	4	1	2
FD11	Donji Vakuf	13.7	180	○(10) ○(20)				2	1	×	×(30)	1	1	2	1	2	1
FD12	Kiseljak	24.0	550	○(10)		Wagonx1		1	1		1	1	1	1	1	1	1
FD13	Jablanica	13.5	231	○(5) ○(10)		Wagonx1		1	1	×	×(30)	1	1	1	1	1	
FD14	Citluk	14.7	230	○(10) ○(15)	×	×(15)		2	1		2	1	2	1	2	1	3
FD15	Stolac	13.6	150	○(15) ○(20)				1	1		1	1	1	1	1	1	1
FD16	Prozor/ Rama	19.0	130	○(7) ○(8)				1	1	○(5)	1	1	2	1	2	1	2
FD17	Tomislavgrad	30.0	60	○(20) ○(30)				2	1	○(5)	1	1	2	1	3	1	2
FD18	Saraj Polje	47.0	40	※Irent				1	1		1	1	1	1	1	1	1
SUB. TOTAL		625.3	6,735	33	6			25	16	11	20	15	34	18	31	17	27
□ Republic of Srpska																	
RS1	Banja Luka	240.0	3,440	○(7)○(8) ○(8)	×			2		○(2) ○(3) ○(9)	4		5	1	5	1	2
RS2	Srbac	24.0	186	○(7)○(8) ○(8)		Wagonx1		1		○(10)	2	1	2	1	2	1	2
RS3	Prijedor	101.6	1,520	○(5)	×	×(25)		2	1	○(10)	2	1	2	1	2	1	2
RS4	Bijeljina	120.0	966	○(8) ○(10)				4	1	on board	2	1	3	1	4	1	2
RS5	Zvornik	60.0	385	○(7)				2	1		1	1	2	1	3	1	2
RS6	Prnjavor	50.0	375	○(3)○(10) ○(15)		Wagonx1		1	1	○(10)	1	1	2	1	1	1	2
RS7	Srebrenica	16.0	85	○(15)		Sedanx1		2	1		1	1	1	1			
RS8	Knezevo	14.8	112	○(10)				1	1		1	1	1	1	1	1	1
RS9	Srpski Brod	25.0	271	○○○		Wagonx2 Sedanx1		1	1		2	1	2	1	2	1	6
RS10	Samac	22.0	157	○(5)	×	×(10) ×(15)		1	1		2	1	5	1	3	1	2
RS11	Rogatica	15.0	179	○(10)	×			2	1				1	1			1
RS12	Vlasenica	19.0	40	○(5)	×	Sedanx1		1	1		1	1	5	1	3	1	3
SUB. TOTAL		707.4	7,716	21	6			20	10	6	19	10	31	12	26	10	25
□ Brcko																	
BR1	Brcko	100.0	300	○○○○○		Onebox, Sedan		3	1	○(2) ○(3)			3	1	1	1	
BR2	Maoca	20.0	140	○(10)		Sedanx1		1	1				1	1			
BR3	Bijela	20.0	90	○(10)		Wagonx1		1	1				1	1			
SUB. TOTAL		140.0	530	7				5	3				5	3	1	1	
TOTAL		1,472.7	14,981	61	12			50	29		39	25	70	33	58	28	52

(*1) ○...Working, △...Often in trouble, ×...Not working
() is indicating age of use

7) Contents and Specifications of the Equipment

The list of equipment items and their specifications are shown in Table 2-13 and Table 2-14 below respectively.

Table 2-13: List of Equipment to be Procured by the Project

Code No.	Site Name	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	1E	1F	1G	1H
		RTG apparatus	Film X-ray development machine	Ultrasound	Spirometer	ECG	Biochemistry analyzer	Spectrophotometer	Blood cell counter	Microscope	Centrifuge	Sterilizer	Balance	Destilator	Washing machine for lab. Glassware	Ambulance vehicle	Defibrillator	Reanimation set	Laryngoscope	Aspirator	X-Ray sealed door 600W	X-Ray sealed door 900W	Monitor window 600W	Monitor window 800W
<input type="checkbox"/> Federation of Bosnia Herzegovina																								
FD01	Bosnska Krupa	1	1	1	1	1	1			2	1	1	1	1	1	1	1	1	1	1				1
FD02	Velika Kladusa	1	1	1	1	1	1			1	1	1	1	1	1	1		1	1	1	1	1		1
FD03	Sanski Most	1	1	1	1	1	1	1	1		1	1	1	1	1	1	1	1		1				1
FD04	Kladanj	1	1	1	1	1				1	1	1	1	1		1	1	1	1	1	1	1	1	1
FD05	Banovici		1	1	1	1		1		1	1	1	1	1		1	1	1	1	1				
FD06	Zenica	1	1	1	1	1		1		1	1	1	1	1	1		1	1	1	1	1	1	1	1
FD07	Fojnica	1	1	1	1	1		1	1	1	1	1	1	1		1	1	1	1	1	1			1
FD08	Visoko	1				1			1		1					1		1	1	1				
FD09	Gorazde	1	1	1		1	1		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
FD10	Vitez			1	1	1		1			1	1	1	1		1	1	1	1	1	1			
FD11	Donji Vakuf	1	1	1	1	1		1	1		1		1	1		1	1	1	1	1	1	1		1
FD12	Kiseljak	1	1	1	1	1		1		1	1	1		1		1	1	1	1	1	1	1		1
FD13	Jablanica	1	1	1	1	1		1	1		1	1		1		1	1	1	1	1				
FD14	Citluk	1	1	1	1			1	1	1	1	1	1	1		1	1	1	1	1	1		1	1
FD15	Stolac	1	1	1	1	1		1	1	1	1	1	1	1		1	1	1	1	1	1			
FD16	Prozor/Rama	1	1	1	1			1	1		1	1	1	1		1	1	1	1	1	1	1		1
FD17	Tomislav Grad	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		1	1
FD18	Saraj Plje	1	1	1	1			1			1	1	1	1		1	1	1	1	1	1			
SUB. TOTAL		16	16	17	16	15	5	12	11	11	18	16	15	17	6	16	15	18	17	17	7	5	3	8
<input type="checkbox"/> Republic of Srpska																								
RS01	Banja Luka	1	1	1	1	1	1		1	1	1	1	1	1	1			1	1	1	3	2	1	1
RS02	Srbac	1	1	1	1	1		1	1		1	1	1	1			1	1	1	1				1
RS03	Prijedor	1	1	1		1		1	1	1	1	1	1	1		1	1	1	1	1			1	1
RS04	Bijeljina	1		1		1	1		1	1	1	1		1	1	1	1	1	1	1				1
RS05	Zvornik	1	1	1	1	1	1	1	1	1	1	1		1	1	1	1	1	1	1	1	1	3	1
RS06	Prnjavor	1	1	1	1	1	1	1	1	1		1	1		1	1	1	1	1	1	2	1	1	1
RS07	Srebrenica	1				1					1	1				1	1	1						
RS08	Knezevo	1	1	1		1	1	1	1	1	1	1	1	1		1	1	1	1	1	1	1		1
RS09	Srpski Brod	1	1	1	1		1	1	1	1		1	1		1	1	1	1	1	1	1	1		1
RS10	Samc	1	1	1		1		1	1	1	1	1	1		1	1	1	1	1	1				1
RS11	Rogatica	1	1	1		1		1	1					1		1		1		1				
RS12	Vlasenica	1		1		1		1	1	1	1	1	1		1	1	1	1	1	1				
SUB. TOTAL		12	9	11	5	11	4	5	11	10	10	9	9	11	3	10	10	12	10	11	8	8	4	9
<input type="checkbox"/> Brcko																								
BR01	Brcko	1		1		1	1	1		1	2	1	1	1	1	1		1	1		2		1	1
BR02	Maoca	1			1	1				1	1	1				1		1				2		
BR03	Bijela		1		1	1				1	1				1		1		1					
SUB. TOTAL		2	1	1	2	3	1	1		3	4	2	1	1	1	3	3	3	1		2	2	1	1
Total		30	26	29	23	29	10	18	22	24	32	27	25	29	10	29	25	33	28	28	17	15	8	18

Table 2-14: Specification of Each Equipment Item

No.	Equipment	Purpose	Sepecifications
1	RTG apparatus	General x-ray: the whole body,chest,born Fluoroscope : pulmonary probes, digestive organ, the backbone etc.	TypeA:Fluoroscopy Table,general X-ray table, bucky stand, 2 tube system, 2 control rooms TypeB:Fluoroscopy Table,general X-ray table, bucky stand, 2 tube system, 1 control room TypeC:Fluoroscopy Table,1 tube system, 1 control room TypeD:General X-ray table, bucky stand, 1 tube system, 1 control room Specifications: Fluoroscopy table; tilting function,TV system X-ray support ;floor type Generator ; 150kV/500mA
2	Film x-ray developing machine	processing of x-ray film	Automatic processor, developer, fixer
3	Ultrasound	diagnosis for obstetrics & gynecology, internal medicine	general purpose,probe; liner/convex/trasvirginal, Printer included
4	Spirometer	general examination, respiratory disease	Measuring ange : 0 to \pm approx 15L Item:VC, FVC, others, thermal printer included
5	ECG	examination of heart function	3 channel, cable rack, mobile card
6	Biochemistry analyzer	blood or urine testing for function of kidney, liver and others	UV to visual,end point & kynetics, continuous measuring(sipper)
7	Spectrophotometer	blood or urine testing for function of kidney, liver and others(for less number of testing)	UV to visual, end point & kynetics, manual measuring(cuvette)
8	Blood cell counter	blood testing	16 parameters
9	Microscope	examination for anaemia, virus diseases	eyepiece lens, objective lens, halogen lamp, adjustable light intensity, mechanical stage
10	Centrifuge	separating of testing sample of blood or urine	table top type, approx 5000rpm, angle roter
11	Sterilizer	sterilizing of laboratory instruments	dry heat type, capacity : approx 500 x 500 x 600 mm
12	Balance	preparation of reagents	digital display, range : approx 400g, readability : approx 0.001g
13	Distiller	washing of instruments, mixing of reagents	Backmann type, single distillation
14	Washing machine for lab glassware	washing of glassware Instruments	rotary jet spray, washing tank ; approx. 500 x 500 x 500 mm
15	Ambulance vehicle	transportation of pasiensts	displacement approx 2400cc, stretcher, IV hook, exygen inspirator
16	Defbrillator	resuscitating of heart stop	main unit, ECG monitor, printer, card
17	Reanimation set	resuscitating of emergent patient	airway tube, resuscitator, foot suction, others
18	Laryngoscope	Insurtion of endoracheal tube	blades for adult & children, battery type
19	Aspirator	suction of sputum or blood of emergent patient	capacity approx. 45l/min, bottle : approx. 3000ml

(2) Facility Renovation Plan

1) Defining the Scope of Assistance and the Division of Work for the Japanese and Bosnian Sides

A. Identifying the Areas in Need of Renovation

During the Basic Design Study, we surveyed the areas where the equipment to be procured by this Project would be installed, which comprised of i) radiology department, ii) laboratory test & physiological examination department, and iii) emergency care department. We directly observed these departments and concluded that the facilities of the examination and emergency care departments were in relatively good condition and that the newly procured equipment could be properly installed and operated there.

Radiology department of many (22) of the 33 sites, however, need to be renovated in order to ensure safe installation and operation of the X-ray equipment.

In view of the above, the renovation work of this Project will be limited to the radiology department and exclude other examination departments and emergency care units.

B. Defining the Scope of Renovation Work

We have sorted out the renovation works on the existing facilities that are necessary for the installation of the X-ray equipment into the eight groups as listed below. The technical requirements for the works are not so high that local contractors situated around the project sites should be able to undertake these works. However, the X-ray protective doors and windows under “group a)” should be handled differently from other items, as the leaded glass needs to be imported and the lead-lined doors and frames need to be custom made.

- a) Installation of X-ray shielding doors and windows: special doors, windows, and frames, as well as imported leaded glass will be needed.
- b) Providing openings on the walls - on the existing and newly-installed walls, openings will be provided for inserting doors and windows
- c) Removal of existing walls - existing partition walls (mostly brick walls) will be removed for layout change.
- d) Erecting of new walls - new partition walls (mostly brick wall + mortar paint) will be installed.
- e) Rewiring and re-plumbing: these works will be done after the removal or

relocation of the existing walls, lavatories, air-conditioners, etc.

- f) Installation of ventilation and lighting - ventilation and lighting equipment will be installed as a result of layout change.
- g) Securing of power source - this work is for securing enough power supply for the newly-procured X-ray equipment.
- h) X-ray shielding on existing walls - X-ray barriers will be added to the existing walls to prevent radiation exposure from newly introduced radiology equipment.

We also divided the renovation works into the following three categories according to scale. We estimate that each work will be completed within one to two months.

Category A: The largest-scale work that includes extension of buildings as a result of the radiology department's separation from the hospital, relocation within the existing building due to reorganization, or expansion due to lack of space. The time period required for completing the work is two (or five in case of extension work) months.

Category B: A small-scale remodeling work mostly consisting of relocating partition walls within the existing radiology department. The work can be completed within a month.

Category C: A minor work for installing X-ray barriers on the operating windows and doors without changing the floor plan for the most part.

Table 2-15 shows the categories of renovation work required for each site. Of the 22 sites, for which renovation work was deemed necessary, 6 sites were classified into Category A, 8 into Category B, and 8 into Category C. The 22 sites include 5 DZ, for which renovation was deemed necessary although request for such work had not been made.

Table 2-15: Categories of Renovation Work Associated with the Installation of X-Ray Equipment

Code No.	Site Name	Outline of DZ			New apparatus		X-ray room		
		Population (1,000)	Staff of Radiology		Type		Location	Target floor area (m ²)	Category of Renovation
			Doctor	Tech.	Graphie	Scopie			
☐ Federation of Bosnia and Herzegovina									
FD1	Bosanska Krupa	32.0	1	3	○	○	Existing	71.8	C
FD2	«Velika Kladusa»	45.0	1	2	-	○	Expansion	«206»	A
FD3	Sanski Most	64.0	1	4	○	○	Existing	95.5	B
FD4	Kladanj	15.4		1	○	○	New place	64.2	B
FD5	Banovici	28.5		2	-	-	-	-	-
FD6	Zenica	147.8	1	3	○	○	Existing	56.4	C
FD7	Fojnica	15.0	(1)	1	○	-	Existing	45.9	-
FD8	Visoko	42.3	2	4	-	○	Existing	52.6	-
FD9	Gorazde	31.8	(1)	(1)	○	-	New place	38.8	A
FD10	Vitez	28.0	1	1	-	-	-	-	-
FD11	Donji Vakuf	13.7		1	○	○	Existing	70.7	C
FD12	Kiseljak	24.0	1	2	○	○	Existing	59.0	C
FD13	Jablanica	13.5		3	○	-	Existing	68.3	-
FD14	Citluk	14.7		1	○	○	Existing	96.3	B
FD15	Stolac	13.6	1	2	○	-	Existing	61.4	-
FD16	Prozor/ Rama	19.0		2	○	○	Existing	36.9	B
FD17	Tomislavgrad	30.0	1	4	○	○	Existing	90.6	C
FD18	Saraj Polje	47.0		1	○	-	Existing	50.4	-
☐ Republic of Srpska									
RS1	Banja Luka	240.0	3	7	○	○	New place	95.6	A
RS2	Srbac	24.0		1	○	○	Existing	64.9	C
RS3	Prijedor	101.6	1	3	○	○	Existing	79.2	B
RS4	Bijeljina	120.0	1	3	-	○	Existing	74.9	B
RS5	Zvornik	60.0	1	4	○	○	New place	73.2	A
RS6	Prnjavor	50.0	1	1	○	○	New place	59.0	A
RS7	Srebrenica	16.0		2	○	-	Existing	55.4	-
RS8	Knezevo	14.8		1	○	○	Expansion	42.8	B
RS9	Srpski Brod	25.0	1	1	○	○	New place	44.4	A
RS10	Samac	22.0	1	1	○	○	Existing	80.9	C
RS11	Rogatica	15.0		2	○	-	Existing	40.6	-
RS12	Vlasenica	19.0		1	○	-	Existing	94.5	-
☐ Brcko									
BR1	Brcko	100.0	1	1	○	○	Existing	89.3	B
BR2	Maoca	20.0		1	○	-	Existing	40.8	C
BR3	Bijela	20.0		1	-	-	-	-	-

Requested DZ for Renovation Number in () is Visiting staff
 FD2 New Radiology Department Building shall be constructed by FBiH side (BF 70m² + GF 206m² = 276m²).

C. Identifying Items in Need of Assistance

Of the eight groups that we have created based on the study findings, it is deemed appropriate to procure the items under “group a),” or installation of X-ray shielding doors and windows, under Japan’s assistance because of the following reasons:

- ① As the installation of radiation barriers will ensure safety and effective utilization of X-ray equipment, its cost effectiveness is deemed appropriate
- ② The target DZ are financially strained and cannot afford expensive X-ray protective doors and windows.
- ③ The scope of accountability of the Japanese side with regard to the renovation works is clearly distinguished from that of the Bosnian side.

Items of groups b) to h), on the other hand, will be excluded from the Project, because of the reasons outlined below. We discussed the matter with the personnel of the target DZ during the site survey, and they generally agreed to undertake the installation of all the items except those of group a).

- ① These items require only minor installation work, which can be rendered by local contractors within their technical capacities.
- ② If the Japanese side were to install these items, it would incur substantial labor costs and other indirect expenses, as the projects sites are many and scattered over a vast area. This would not be cost effective, and the effect of such investment is not very visible.
- ③ The scope of accountability of the Japanese side with regard to the renovation works is not clearly distinguishable from that of the Bosnian side.

D. Handing of the DZ that did not Request Renovation Work

Our site survey confirmed that five DZ were in need of renovating heir radiology department even though they did not request for such works. As shown in Table 2-16 below, these sites, including the five DZ, need to be installed with X-ray shielding doors and windows to ensure safety and effective use of the X-ray equipment. Because of the strained finances, it is deemed appropriate to assists these five sites by providing them with the items of group a) under this Project.

Table 2-16: DZ that did not request renovation work but need protective doors and windows

Code No.	Site Name	X-ray room which needs new device for X-ray protection doors and windows
FD1	Bosanska Krupa	Small existing command window(37x37cm). Replacement to larger one is preferable.
FD3	Sanski Most	Small existing command window(37x37cm). Replacement to larger one is preferable.
FD11	Donji Vakuf	Small existing command room. Expansion of command room is preferable for new apparatus.
FD12	Kiseljak	Expansion of the command room is preferable for avoiding any blinc spot from the command room.
FD17	Tomislavgrad	Additional command window is necessary at existing room for new apparatus.

E. Scopes of Works with Regard to Renovation for the Japanese and Bosnian Sides

Based on the site survey findings in Bosnia and Herzegovina and their analysis in Japan, we have divided the 33 target sites according to the need for renovation work, the categories of renovation works (A, B, and C), and the renovation items. As shown in Figure 2-1 below, the Japanese side will undertake the items of group a) and the

Bosnian side undertaking the rest.

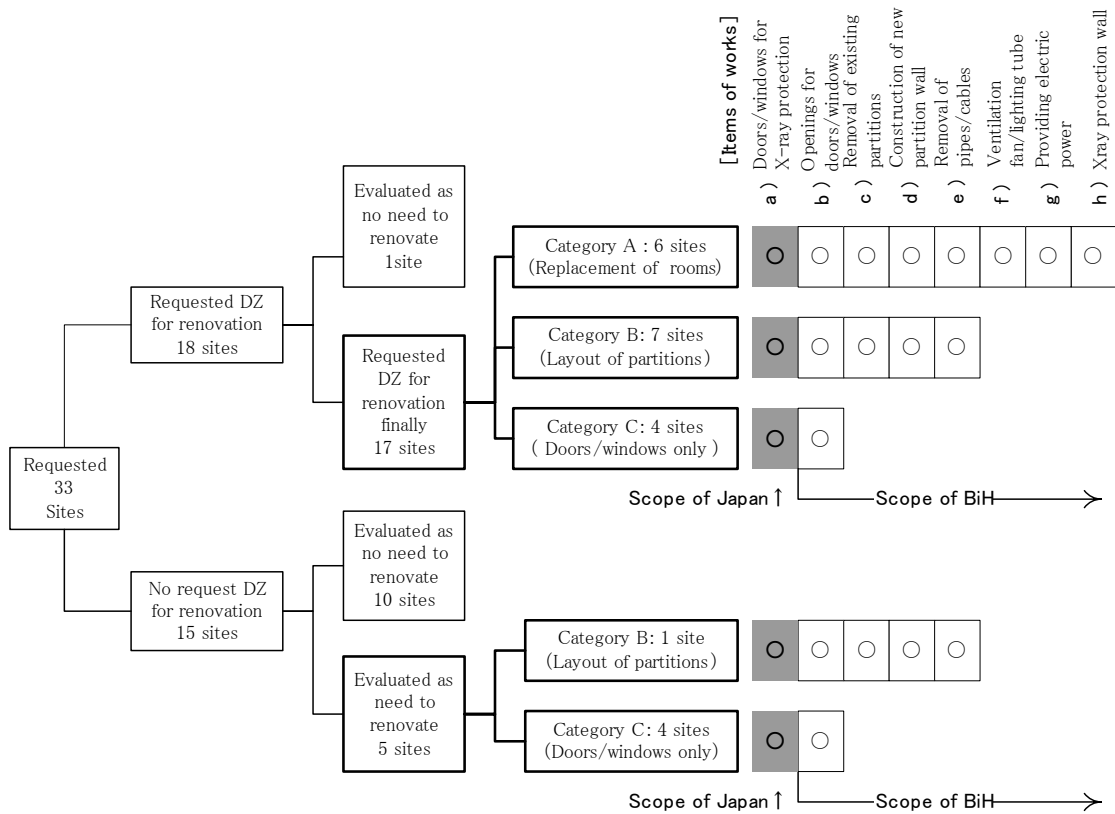


Figure 2-1: Division of Renovation Works and Undertakings of Both Countries

2) Construction Plan

A. Outline of Renovation Plan

This Project will introduce new X-ray equipment to 30 (16 in FBiH, 12 in RS, and 12 in BR) of the 33 target sites, the outline and detail of which are shown in Table 2-17 “Outline of Equipment Procurement and Renovation Work Related to Radiology Department” and Section 2-2-3 “Basic Design Drawing” The scale and content of the renovation work vary from site to site and do not follow the same standards. Of the 30 sites to be provided with X-ray equipment, 22 are in need of facility renovation and 8 are not. The size of the area to be renovated in each target site ranges from 35 m² to 95m². The standard size of the existing X-ray rooms is 4m x 5 m = 20m². The average size of the X-ray rooms, in which two or more types of equipment, such as general radiography and fluoroscope apparatus, are installed, is 35m² to 45m².

B. Floor Plan of X-Ray Room & Control Room

Each target site of this Project will be provided with one of the four different combinations of general radiography and fluoroscopy equipment that we have established according to the status of the existing facilities and equipment, as well as the demand for x-ray examinations of each site. We drafted the Renovation Plan in such a way to minimize the work to bare essentials. As a result, the basic layout of the X-ray room and the control room of the 30 sites (including 8 sites that do not require a floor-plan change) were sorted out to the following five types:

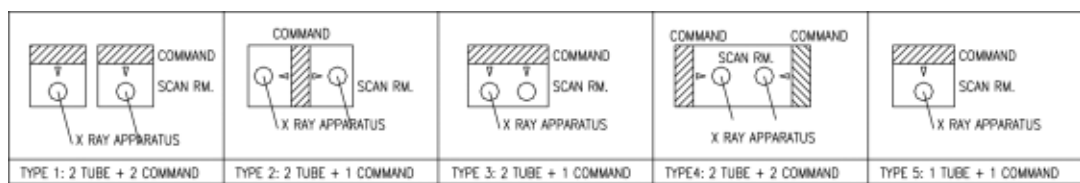


Figure 2-2: Different Types of X-Ray Room / Control Room Layout

- Type 1: General X-ray / control room and the fluoroscopy / control room exist separately (5 sites).
- Type 2: General X-ray room and the fluoroscopy room are sandwiching one control room (3 sites).
- Type 3: It consists of one control room and one radiography room, in which general X-ray apparatus and fluoroscopy equipment are installed side by side (11 sites).
- Type 4: General x-ray apparatus and the fluoroscopy equipment are situated back to back within the same room, each having a control room on the other side of the wall it is facing (2 sites).
- Type 5: It consists of one room installed either with general X-ray or fluoroscopy equipment adjacent to one control room (9 sites).

C. Cross Section of X-Ray Room

To avoid certain risks associated with the installation work, this Project will procure general X-ray apparatus that will run on the floor railings. Although the existing general X-ray apparatus is mostly of the ceiling-mounted type, it will be replaced with floor type equipment because installation of the floor railing dose not require a scaffolding and therefore is safer than installing the railing on the ceiling.

The general x-ray apparatus will require a minimum ceiling height of 2.4 meters, which, we observed, was cleared by all the target sites. The fluoroscopy equipment with rotating table, on the other hand, will require a ceiling height of at least 2.8 meters. Therefore, it was decided and the recipient side agreed that this Project would not install the fluoroscopy equipment in the FD7 Fojnica whose X-ray room had the ceiling height of less than 2.8 meters .

D. Installation Method of X-Ray Protective Doors and Windows

In order not to be confused with the finish work to be done by the Bosnian contractors, the X-ray protective doors and windows will be installed after all other works are done on the site.

3) X-Ray Protection Plan

A special license needs to be obtained from the relevant authority before opening or re-opening a new or renovated X-ray facility and before operating newly-introduced or relocated x-ray apparatus. Prior to the issuance of such permit, the local radiation protection center or other related organizations conduct an X-ray leakage test.

This Project will install the x-ray equipment in the following four methods: i) replace the existing equipment with the same type of new equipment in the same layout within the existing X-ray room, ii) replace the existing equipment with a different type of new equipment or the same type of equipment but in a different layout within the existing X-ray room, iii) install new equipment in the existing X-ray room that has been expanded or renovated, and iv) set up a new X-ray room by insulating an existing room that has been used for other purposes. For X-ray rooms under categories ii) and iii), areas that need to be insulated have to be reexamined. Those under category iv), insulation of the entire rooms will become necessary.

Technical standards for radiation protection are currently being formulated in Bosnia and Herzegovina. In the meantime, standards that were established during the former Yugoslavia era (Government Notice No. 40, July 18, 1986) are applied to the operation of radiology equipment. For specific guidelines for protection measures and testing methods, NCRP(*1) Report No. 49 “Structural Shielding Design and Evaluation for Medical Use of X Rays and Gamma Rays of Energies Up to 10 MeV” of September 15, 1976 is referenced.

(*1) NCRP = National Council on Radiation Protection and Measurements, an organization based in the United States that seeks to formulate and widely disseminate information, guidance, and recommendations on. radiation protection and measurements that represent

the consensus of leading scientific thinking. It is developing and publishing various NCRP documents.

In designing the renovation works, the following standards of the former Yugoslavia need to be complied with, and the retroactivity of the currently formulated new standards should be clearly defined.

- Control room and film processing room must be separated and divided.
- Control room must be shielded with appropriate protective doors and windows, the acceptable shielding level of which depends on the capacity of the equipment but generally is a lead equivalent of 1.5mm (Pb 1.5mm).
- Radiation protection standards for structural materials are: i) 120mm for concrete, ii) 250mm for brick + regular mortar, iii) 1.5mm for lead sheet, and iv) 25mm for barite mortar (*2).
- Surfaces that will be exposed to X-rays will need to be shielded. Since ceilings and floors are usually made of concrete slabs, radiation leakage to upper and lower floors is unlikely.
- Walls that will be exposed to direct X-rays as well as their sidewalls must be shielded. Ample protection must be installed particularly on the directly exposed surfaces. For the sidewalls, on the other hand, areas that are two or more meters above the floor generally do not need to be shielded.

(*2) Barite powder used for plastering work consisting mostly of barium sulfur that has the unique ability to strongly absorb X-rays and gamma rays.

4) Facility Plan

A. Ventilation System

The regulations of Bosnia and Herzegovina provide that an X-ray room must be equipped with a ventilation system. For this Project, ventilators will need to be newly installed by the Bosnian side in six target sites that will be relocating their X-ray rooms.

B. Heating System

The X-ray rooms to be covered by this Project will require heating. Since the existing X-ray rooms, including those to be relocated, are already installed with hot-water or electric radiant heating apparatus, no renovation work will be needed with regard to their heating system. However, for the changing rooms that will be created based on the new floor plans, the Bosnian side will need to install auxiliary heating devices as

necessary.

C. Rewiring and Re-plumbing

Although rewiring of electric cables and re-plumbing of water pipes and other conduits may become necessary in the 14 sites that will be removing existing walls and installing new ones, proper planning of such works is difficult due to a lack of wiring / plumbing diagrams and other pertinent documents. Therefore, it was decided that each target DZ would plan and undertake such works on its own account. In addition, some sites may require replacement or new installation of lighting and sanitary fixtures, which should be designed by local experts, such as consultant firms and construction companies situated around the project sites.

D. Securing Power Source

Some sites to be installed with new X-ray equipment may need to have a power source drawing from the main distribution board of the radiology department. While some of these DZ may be able to use existing local panels, others may need to install a local panel in a new location. The six sites that will be relocating their X-ray rooms will need to create a separate circuit (3 phase 4 lines 220/380V, 50 – 80A) for the X-ray equipment from the nearest panel board to the X-ray room at their own account.

Table 2-17: Outline of Equipment Procurement and Renovation Work Related to the Radiology Department

Code No.	Site Name	Outline of DZ				Condition of existing				Project Plan				X-ray protection do				X-ray rooms				Remarks
		Popula tion(un it 1,000 ps)	Patients /day	Staff of Radiology※ (Visiting staff)	No. of exam. /month	Graphie	Scopie	Odeica	Manno	Type	Combi nation type(*3)	Door(600w)	Door(900w)	Window(600 w)	Window(800 w)	Location	Target Floor area(m²)	Floor area(m²)	Total floor area(m²)	Type of Room layout (*6)	Category of renovation(*7)	
		Doc.	Tech						Graph.	Scopie					Graphi	Scopie	(*5)					
☐ Federation of Bosnia and Herzegovina																						
FD1	Bosanska Krupa	32.0	182	1	3	383	△	×														
FD2	Velika Kladusa	45.0		1	2	300	○															
FD3	Sanski Most	64.0	250	1	4	896	△	×														
FD4	Kladanj	15.4	340		1	na	×	×														
FD5	Banovici	28.5	442		2	388																
FD6	Zenica	147.8	2,500	1	3	1,250	△		○, X	○												
FD7	Fojnica	15.0	350	(1)	1	90	△															
FD8	Visoko	42.3	200	2	4	80	○	○														
FD9	Gorazde	31.8	500	(1)	(1)	(*1)																
FD10	Vitez	28.0	200	1	1	400	○															
FD11	Donji Vakuf	13.7	180		1	280	○	×														
FD12	Kiseljak	24.0	550	1	2	902	×															
FD13	Jablanica	13.5	231		3	68	○	×														
FD14	Citluk	14.7	230		1	(*1)	×	×														
FD15	Stolac	13.6	150	1	2	900	○	×														
FD16	Prozor/ Rama	19.0	130		2	200			△													
FD17	Tomislavgrad	30.0	60	1	4	600	○	×														
FD18	Saraj Polje	47.0	40		1	1,200	○															
SUB. TOTAL		625.3	6,535	10	37		15	9	4	1	1	14	11									
☐ Republic of Srpska																						
RS1	Banja Luka	240.0	3,440	3	7	734	△															
RS2	Srbac	24.0	186		1	280	○	×														
RS3	Prijedor	101.6	1,520	1	3	1,000	△	△														
RS4	Bijeljina	120.0	966	1	3	477	△	×														
RS5	Zvornik	60.0	385	1	4	670(*4)																
RS6	Prnjavor	50.0	375	1	1	319	○	○														
RS7	Srebrenica	16.0	85		2	264	○	×														
RS8	Knezevo	14.8	112		1	413	na	×														
RS9	Srpski Brod	25.0	271	1	1	1,651	○, X	×														
RS10	Samac	22.0	157	1	1	137	○	○														
RS11	Rogatica	15.0	179		2	138	△															
RS12	Vlasenica	19.0	40		1	na	○	×														
SUB. TOTAL		707.4	7,716	9	27		11	9	1	1	11	9										
☐ Brcko																						
BR1	Brcko	100.0	300	1	1	593	○	○														
BR2	Maoca	20.0	140		1	31	△(*4)															
BR3	Bijela	20.0	90		1	11	○	○														
SUB. TOTAL		140.0	530	1	3		3	2	1													
TOTAL		1,472.7	14,781	20	67		29	20	4	3	2	27	21									

Requested site for renovation (*3) A:Graphie+Scopie, 2tube system, 2command rms. (*6) Type 1:2 appa., 2X-ray rms.+2Command rms. (*7) A: New plan with replacement of Radiology(w/utilities)

(*1) By Hosp. service due to not working appa. B:Graphie+Scopie, 2tube system, 1command rm. Type 2:2appa., 2X-ray rms.+1command rm. B: Renovate existing X-ray rms.(Variation of artitions)

(*2) ○;Working, △;Often in trouble, ×;Not working C:Scopie, 1tube system, 1command rm. Type 3:2appa., 1X-ray rm.+1command rm. C: No variation but install windows/doors

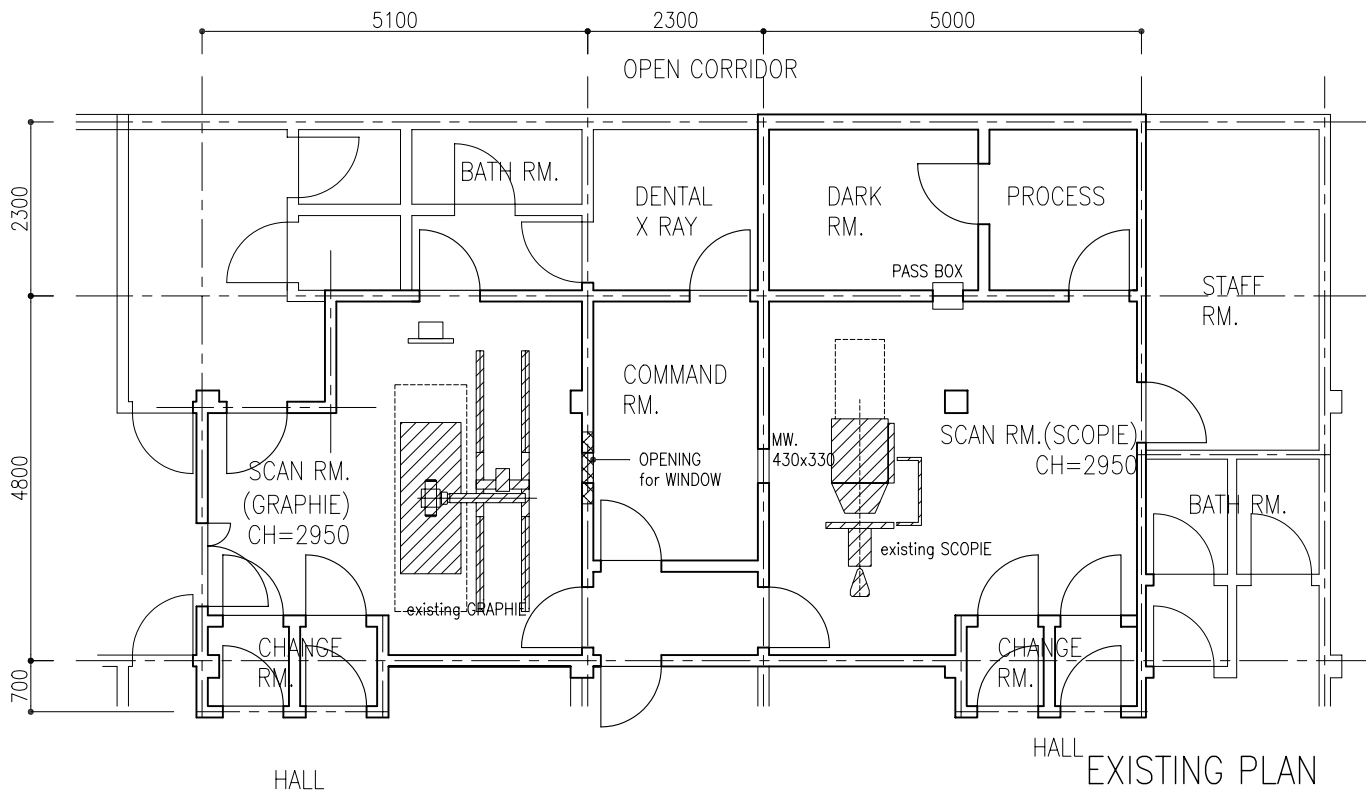
D:Graphie, 1tube system, 1command rm. Type 4:2appa., 1X-ray rm.+2command rms.

(*4) Mobile type Type 5:1appa., 1X-ray rm.+1command rm.

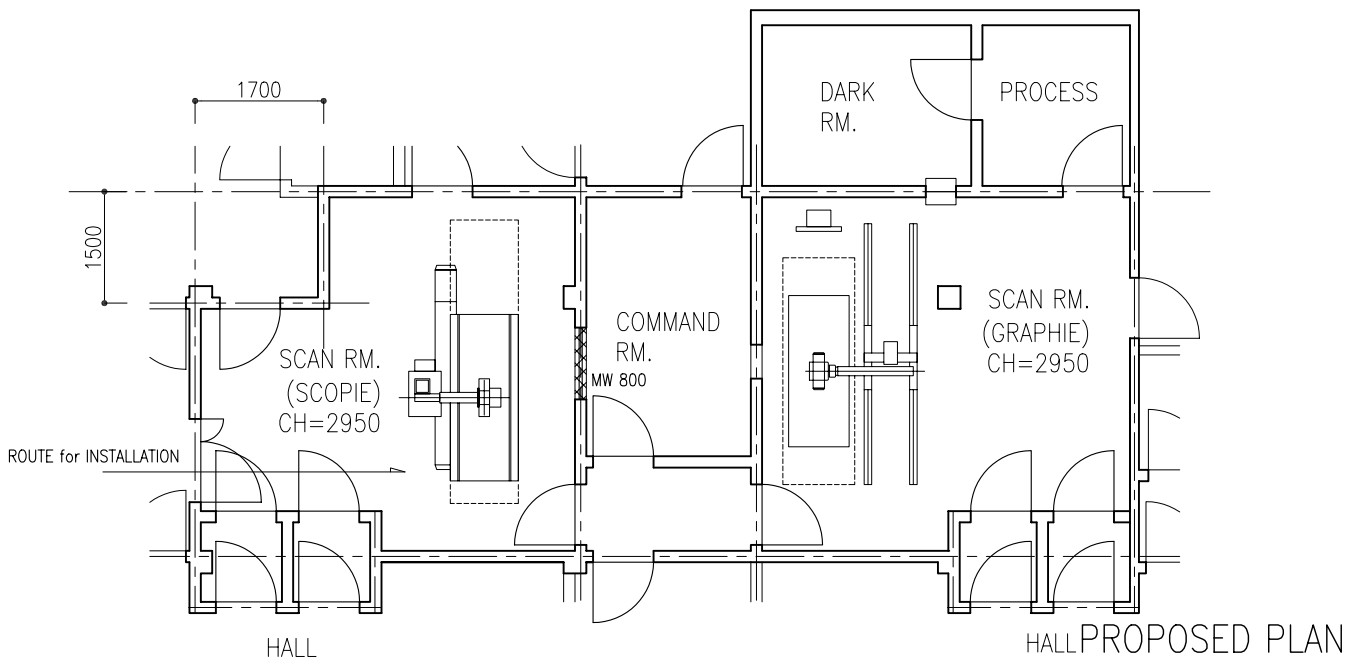
(*5) X-ray rm.+Command rm.+Changing rm.+Dark rm. 《》 FD2 New Radiology Department Building shall be constructed by FBiH side. (BF 70n²+GF 206n²=276n²)

2.2.3 Basic Design Drawing

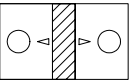
- (1) Proposed Renovation Plans at Radiology Section: Existing and Proposed Plans
(30 sites as reference only)**
- (2) Standard Drawings of X-Ray Protective Door Installation**
- (3) Standard Drawings of Monitor Window Installation**

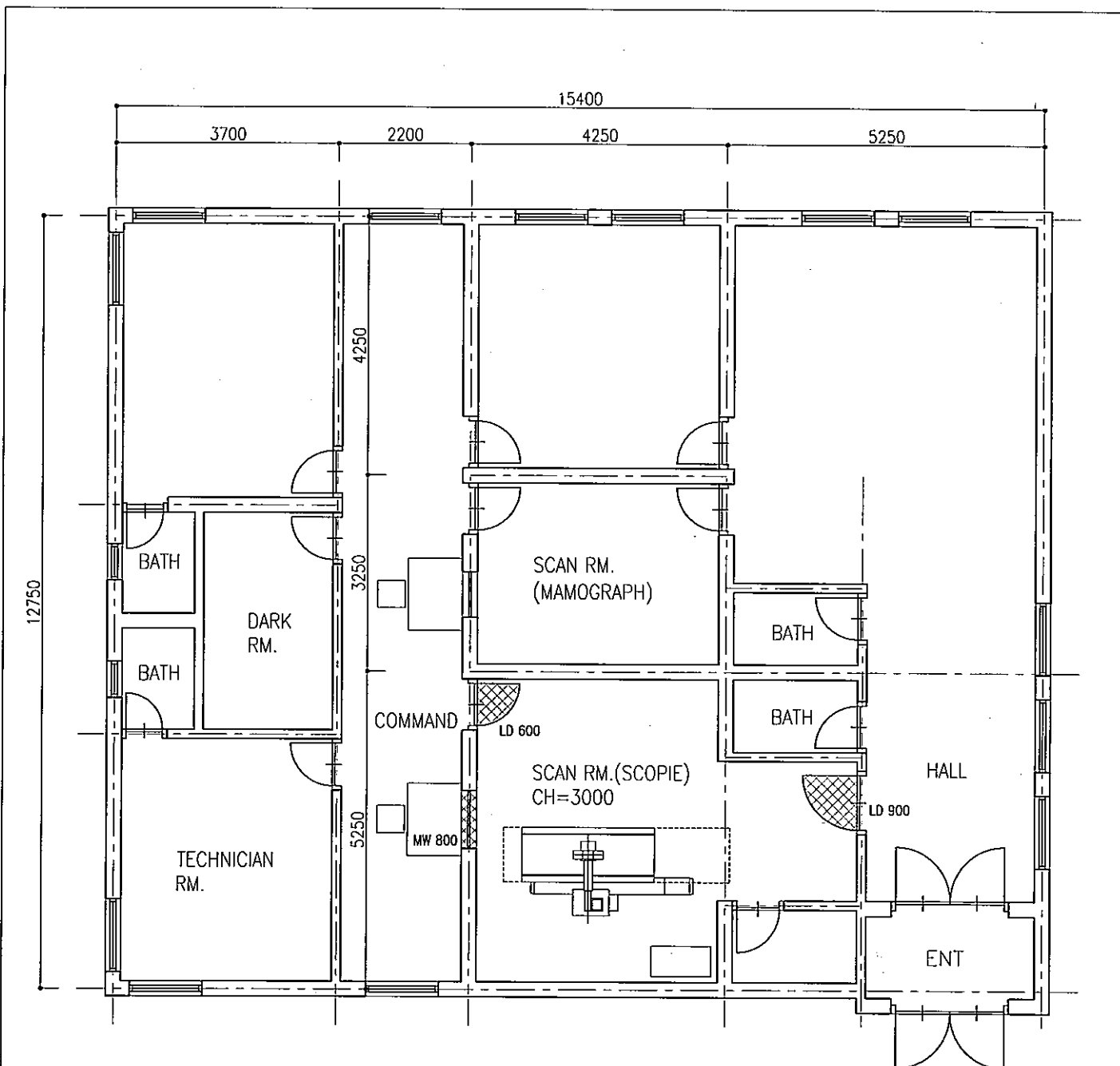


- HALL EXISTING PLAN
- TO BE REMOVED BY BIH
 - TO BE OPENED BY BIH



- HALL PROPOSED PLAN
- TO BE INSTALLED BY BIH
 - TO BE INSTALLED BY JPN

FD.1 BOSANSKA KRUPA S=1/100	SCOPE OF WORK * REMOVAL OF FURNITURE and CLEANING is applied in common.	B. CIVIL WORK - MAKING OF OPENING (see DWG.)	D. RADIATION PROTECTION
	A. PREPARATION WORK - REMOVAL OF EXISTING X-RAY APPARATUS	C. FINISH WORK - MORTAR FINISH(+SOP) on OPENING	E. MECHANICAL & ELECTRICAL WORK - MONITOR WINDOW w800 X1 (JPN) - OTHER NECESSARY M&E WORK
RENOVATION AREA: 71.8 sqm. LOCATION: GROUND FLOOR RENOVATION TYPE: C X RAY: GRAPHIE(NEW)+SCOPIE(NEW)			
 TYPE 2			



PROPOSED PLAN (NEW CONSTRUCTION BY BiH)

 TO BE INSTALLED BY BiH

 TO BE INSTALLED BY JPN

FD2. VELIKA Kladusa

 S=1/100

RENOVATION AREA: 35.6 sqm.

LOCATION: GROUND FLOOR

RENOVATION TYPE: A (EXPANDING)

X RAY: SCOPIE(NEW)



TYPE 5

SCOPE OF WORK

- * REMOVAL OF FURNITURE and CLEANING is applied in common.
- * EXCEPT FOLLOWING WORK, EVERY BUILDING WORK SHOULD BE DONE BY BiH.

A. PREPARATION WORK

- REMOVAL OF WALL (see DWG.)
- REMOVAL OF FLOOR/WALL FINISH

B. CIVIL WORK

- CONSTRUCTION OF PARTITION (see DWG.)
- MAKING OF OPENING (see DWG.)

C. FINISH WORK

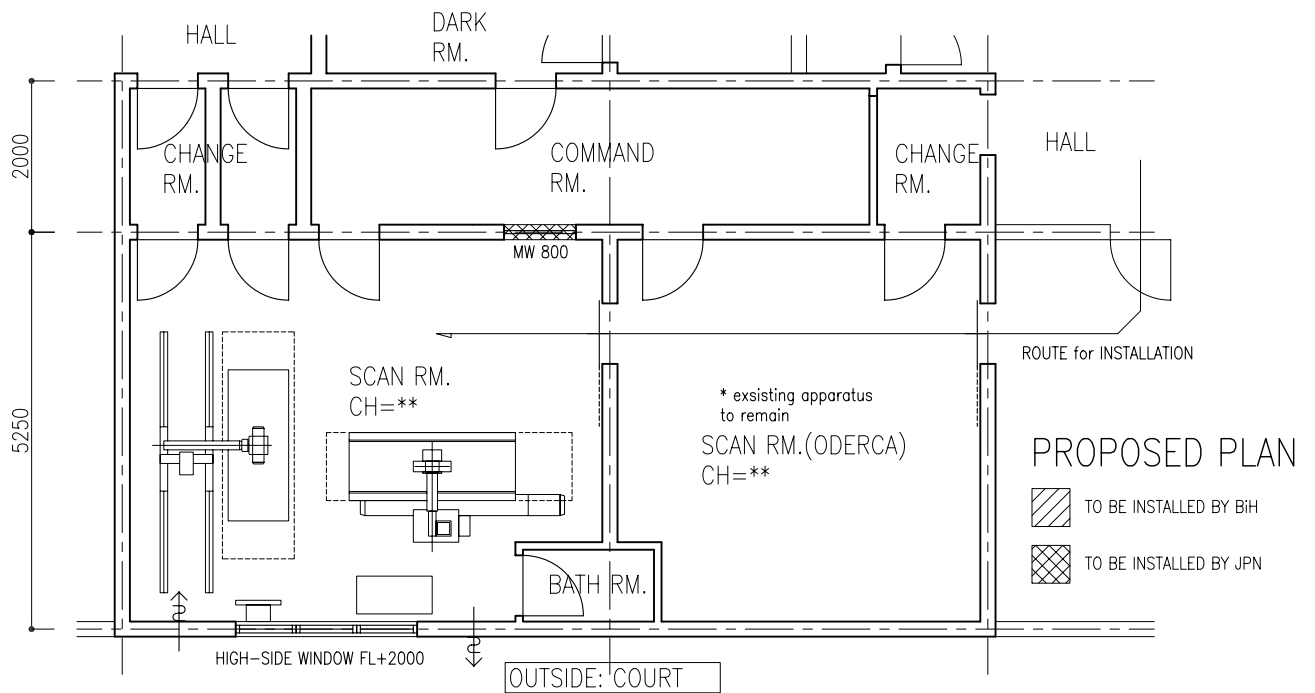
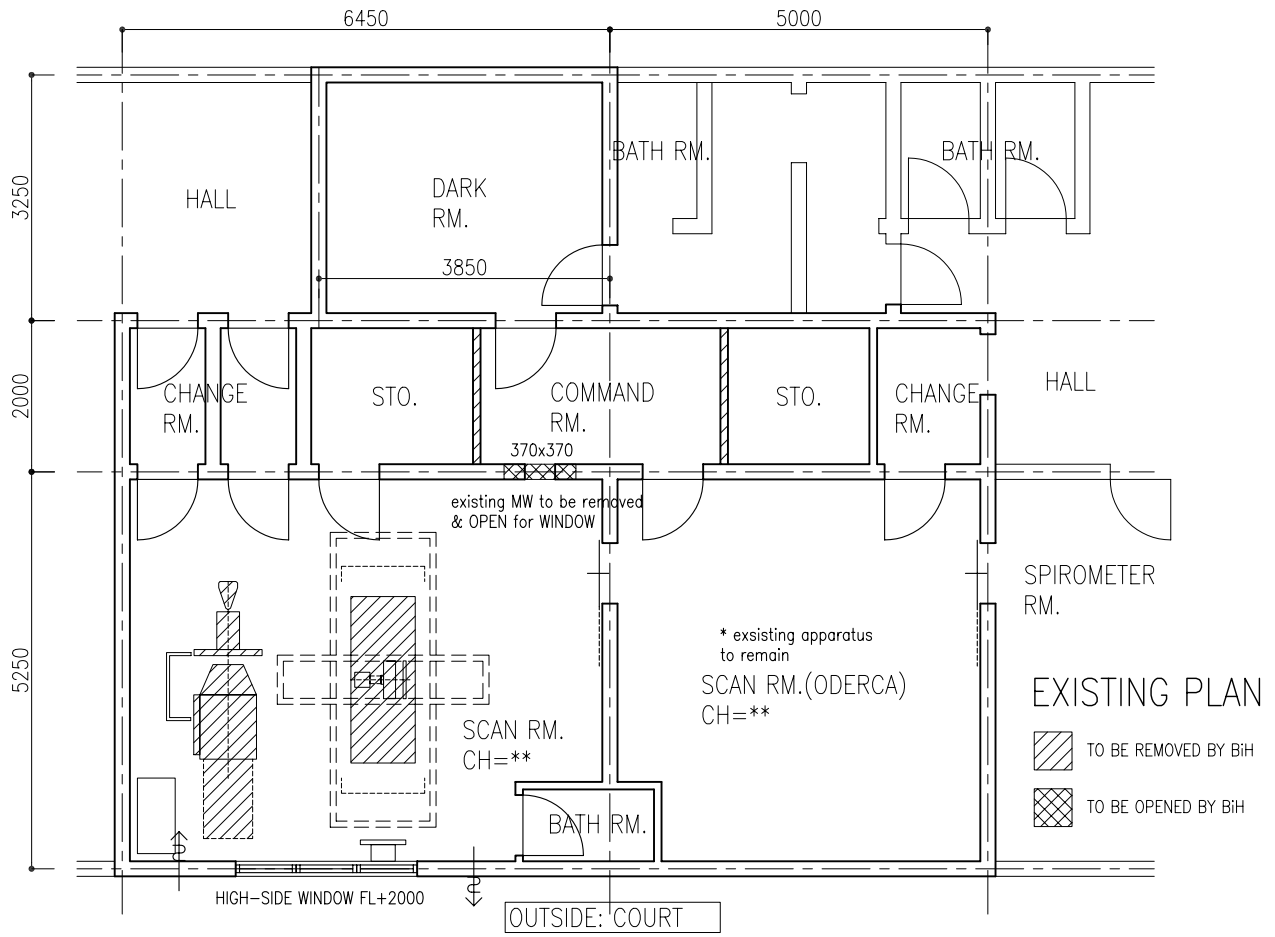
- MORTAR FINISH(+SOP) on NEW PARTITION
- MORTAR FINISH(+SOP) on OPENING
- TOUCH-UP on FLOOR/WALL/CEILING
- SETTING OF WOOD/PLASTIC DOOR (see DWG.)

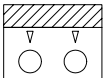
D. RADIATION PROTECTION

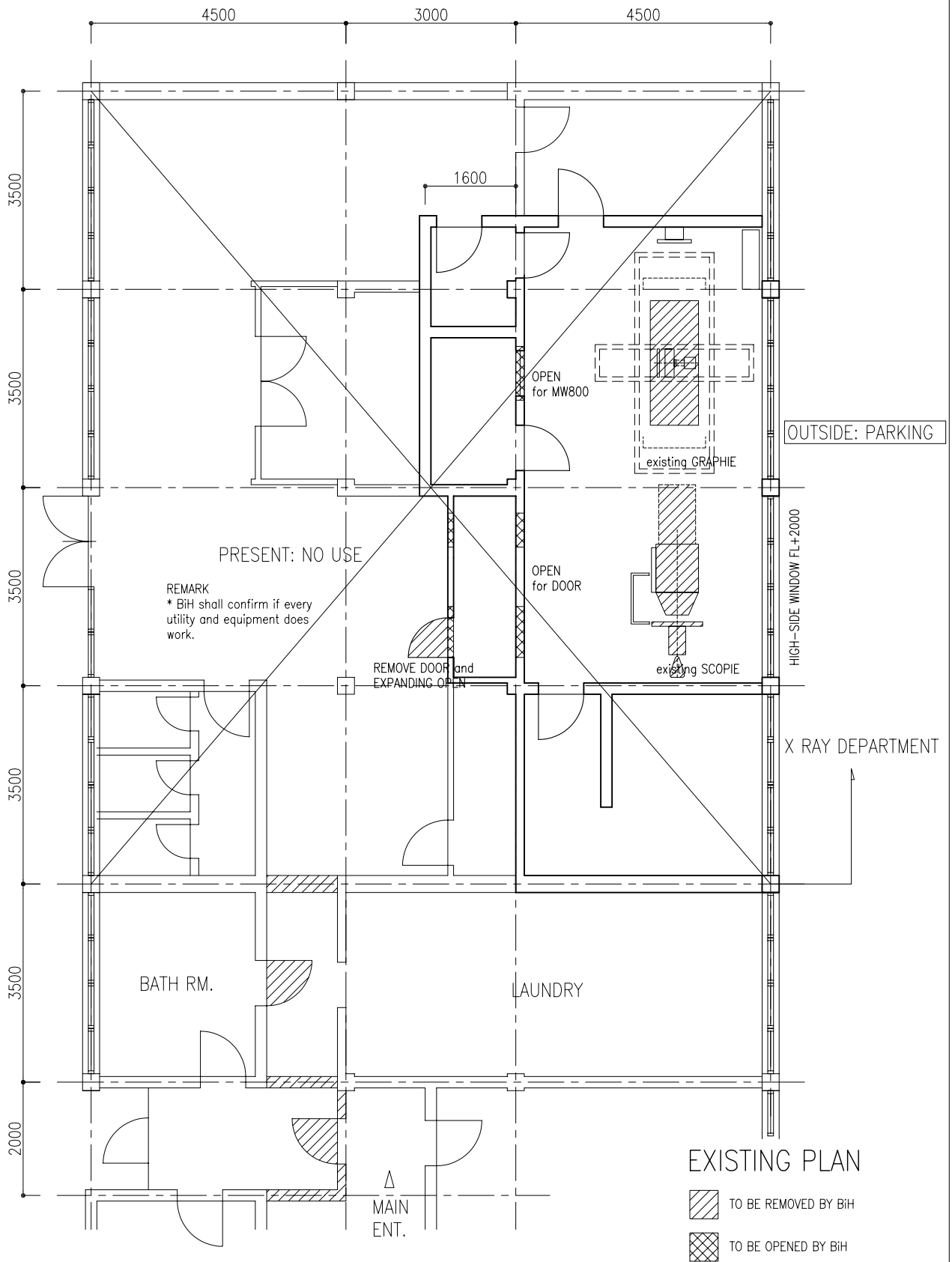
- PROTECTION on WALL (see DWG.)
- LEAD DOOR w600 X1 (JPN)
- LEAD DOOR w900 X1 (JPN)

E. MECHANICAL & ELECTRICAL WORK

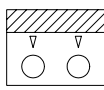
- MONITOR WINDOW w800 X1 (JPN)
- POWER SUPPLY for X RAY APPARATUS
- INSTALLATION OF WASH BASIN (see DWG.)
- OTHER NECESSARY M&E WORK



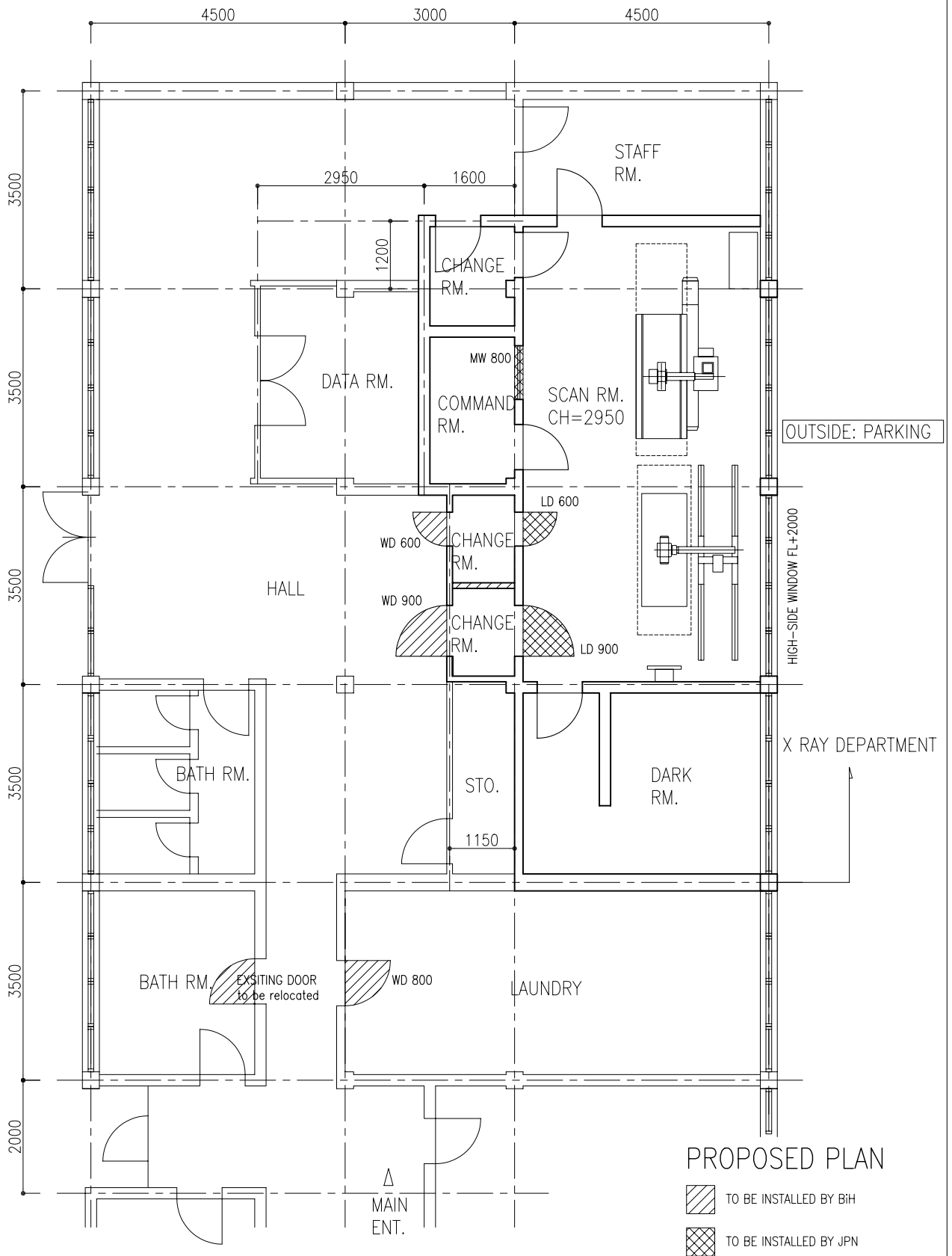
FD3. SANSKI MOST S=1/100	SCOPE OF WORK	B. CIVIL WORK	D. RADIATION PROTECTION
	* REMOVAL OF FURNITURE and CLEANING is applied in common.	- MAKING OF OPENING (see DWG.)	
RENOVATION AREA: 95.5 sqm. LOCATION: GROUND FLOOR RENOVATION TYPE: B X RAY: GRAPHIE(NEW)+SCOPIE(NEW)	A. PREPARATION WORK	C. FINISH WORK	
	- REMOVAL OF EXISTING X-RAY APPARATUS		- MONITOR WINDOW w800 X1 (JPN)
	- REMOVAL OF PARTITION (see DWG.)	- MORTAR FINISH(+SOP) on OPENING	E. MECHANICAL & ELECTRICAL WORK
	- REMOVAL OF FLOOR/WALL FINISH	- TOUCH-UP on FLOOR/WALL/CEILING	
		- SETTING OF WOOD/PLASTIC DOOR (see DWG.)	
 TYPE 3			- OTHER NECESSARY M&E WORK



FD4. KLADANJ R S=1/100	SCOPE OF WORK * REMOVAL OF FURNITURE and CLEANING is applied in common.
RENOVATION AREA: 64.2 sqm. LOCATION: GROUND FLOOR RENOVATION TYPE: B X RAY: GRAPHIE(NEW)+SCOPIE(NEW)	A. PREPARATION WORK - REMOVAL OF EXISTING X-RAY APPARATUS - REMOVAL OF PARTITION (see DWG.) - REMOVAL OF FLOOR/WALL FINISH - REMOVAL OF DOOR (see DWG.)



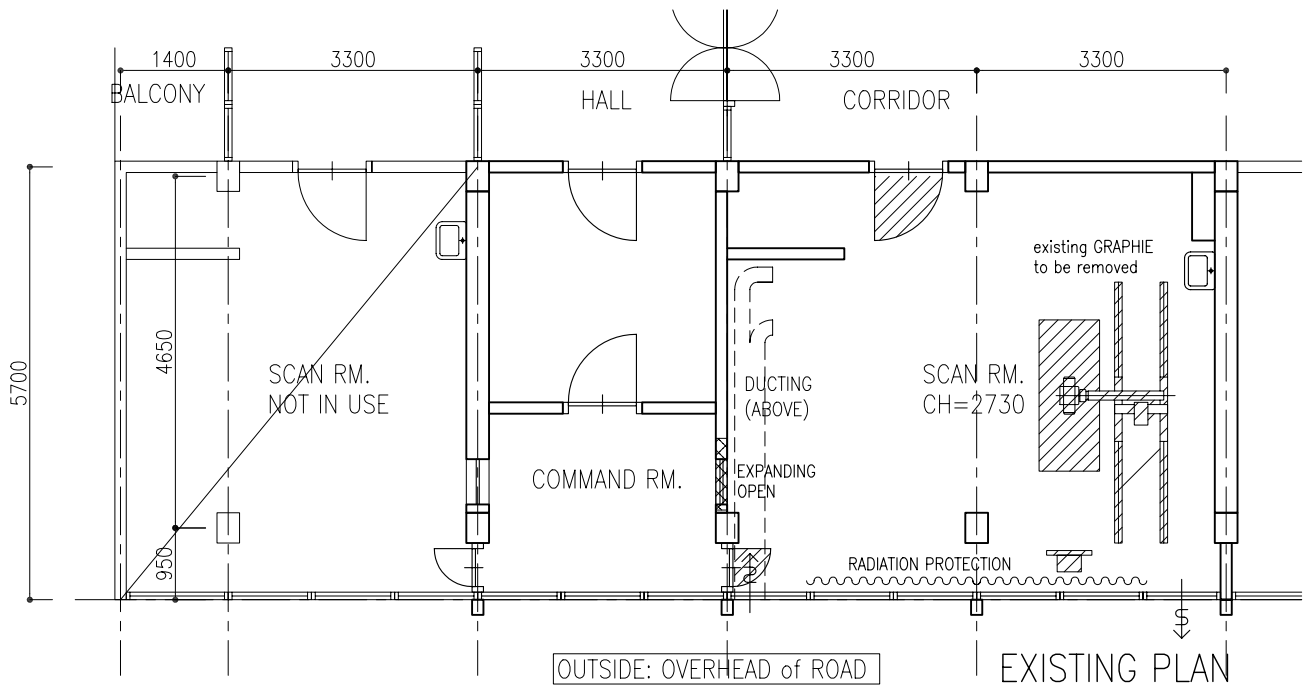
TYPE 3



PROPOSED PLAN

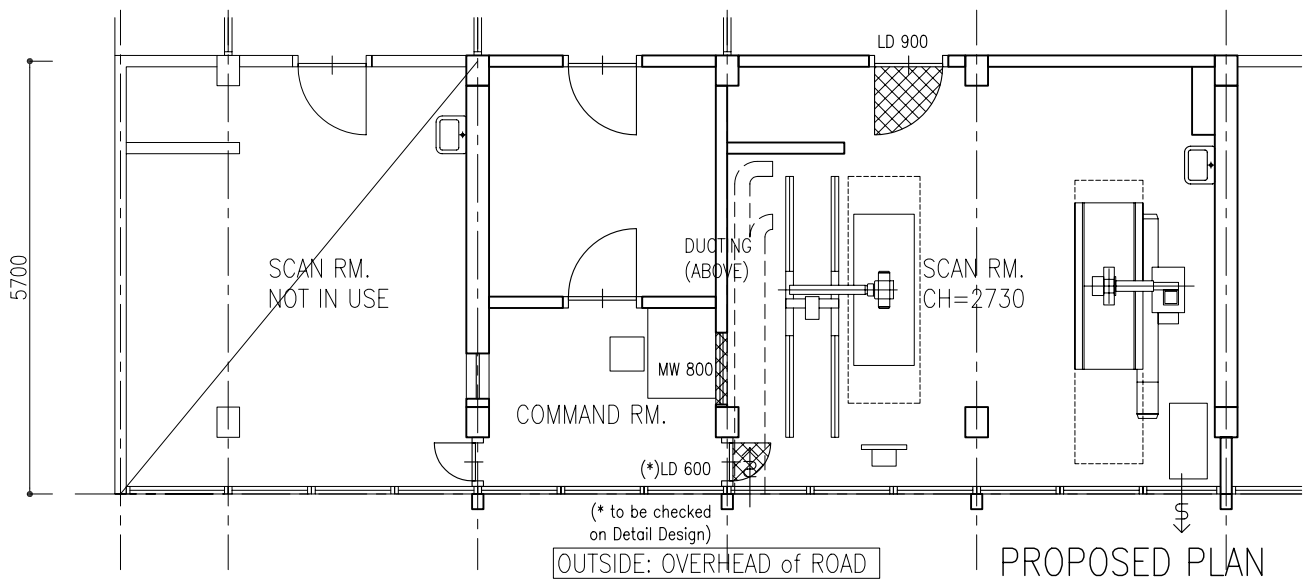
- TO BE INSTALLED BY BIH
- TO BE INSTALLED BY JPN

FD4. KLADANJ S=1/100	B. CIVIL WORK	D. RADIATION PROTECTION
	- CONSTRUCTION OF PARTITION (see DWG.) - MAKING OF OPENING (see DWG.)	- LEAD DOOR w600 X1 (JPN) - LEAD DOOR w900 X1 (JPN)
RENOVATION AREA: 64.2 sqm. LOCATION: GROUND FLOOR RENOVATION TYPE: B X RAY: GRAPHIE(NEW)+SCOPIE(NEW)	C. FINISH WORK	E. MECHANICAL & ELECTRICAL WORK
 TYPE 3	- MORTAR FINISH(+SOP) on NEW PARTITION - MORTAR FINISH(+SOP) on OPENING - TOUCH-UP on FLOOR/WALL/CEILING - SETTING OF WOOD/PLASTIC DOOR (see DWG.)	- MONITOR WINDOW w800 X1 (JPN) - POWER SUPPLY for X RAY APPARATUS - OTHER NECESSARY M&E WORK
	- 45 -	



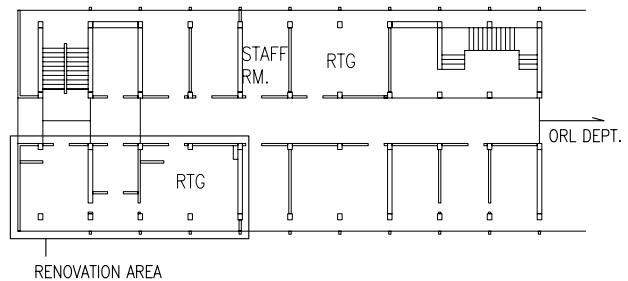
EXISTING PLAN

- TO BE REMOVED BY BIH
- TO BE OPENED BY BIH

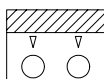


PROPOSED PLAN

- TO BE INSTALLED BY BIH
- TO BE INSTALLED BY JPN

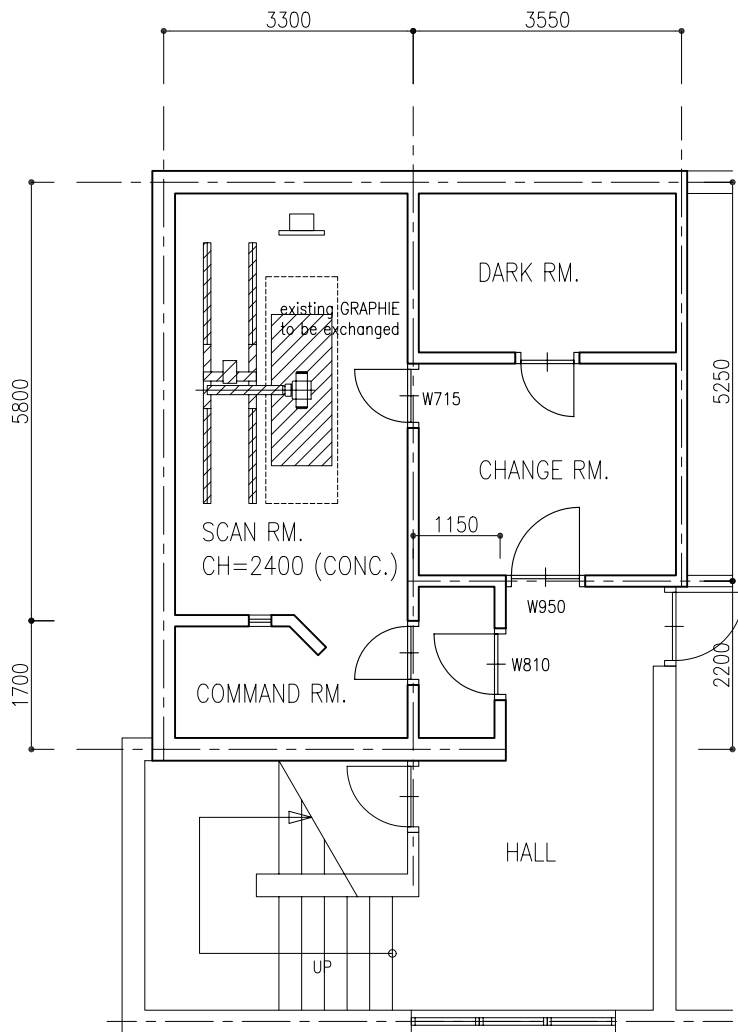


FD.6 ZENICA
 [R] S=1/100
 RENOVATION AREA: 56.4 sqm.
 LOCATION: 2ND FLOOR
 RENOVATION TYPE: C
 X RAY: GRAPHIE(NEW) + SCOPIE(NEW)



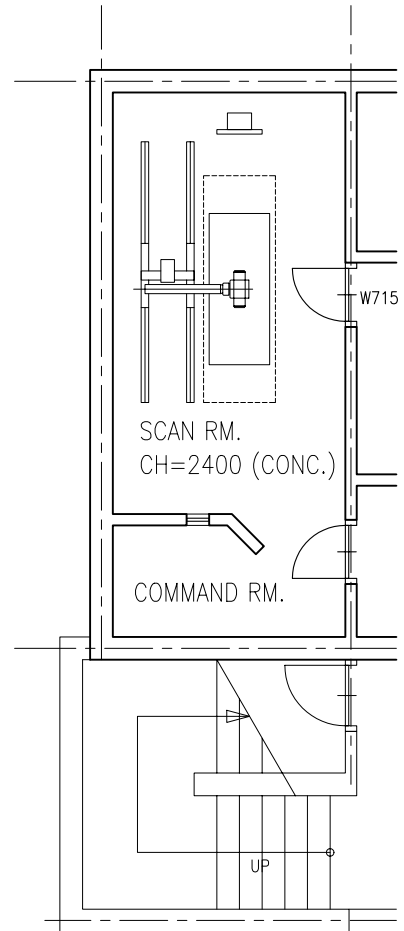
TYPE 3

SCOPE OF WORK	B. CIVIL WORK	D. RADIATION PROTECTION
* REMOVAL OF FURNITURE and CLEANING is applied in common.	- MAKING OF OPENING (see DWG.)	- LEAD DOOR w600 X1 (JPN) - LEAD DOOR w900 X1 (JPN)
A. PREPARATION WORK	C. FINISH WORK	- MONITOR WINDOW w800 X1 (JPN)
- REMOVAL OF EXISTING X-RAY APPARATUS	- MORTAR FINISH(+SOP) on OPENING	E. MECHANICAL & ELECTRICAL WORK
- REMOVAL OF PARTITION (see DWG.)		- POWER SUPPLY for X RAY APPARATUS
- REMOVAL OF DOOR (see DWG.)		- OTHER NECESSARY M&E WORK




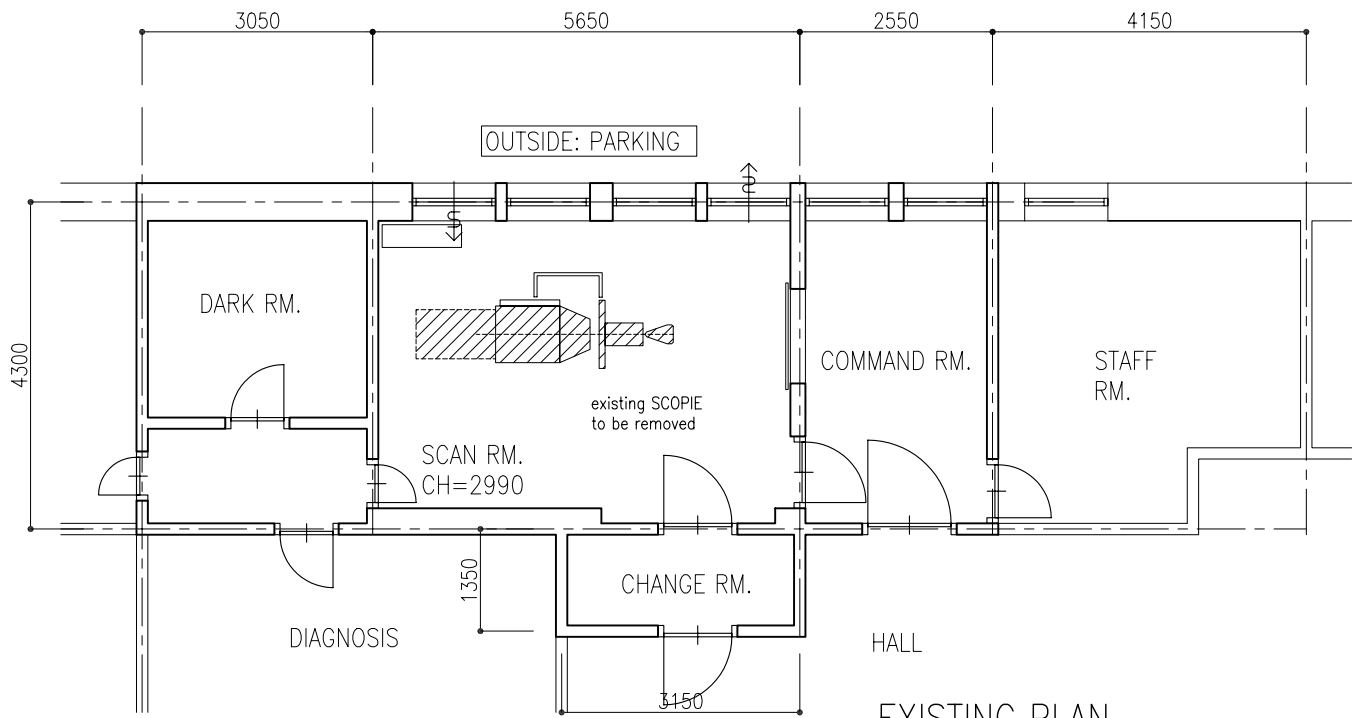
EXISTING PLAN

 TO BE REMOVED BY BIH



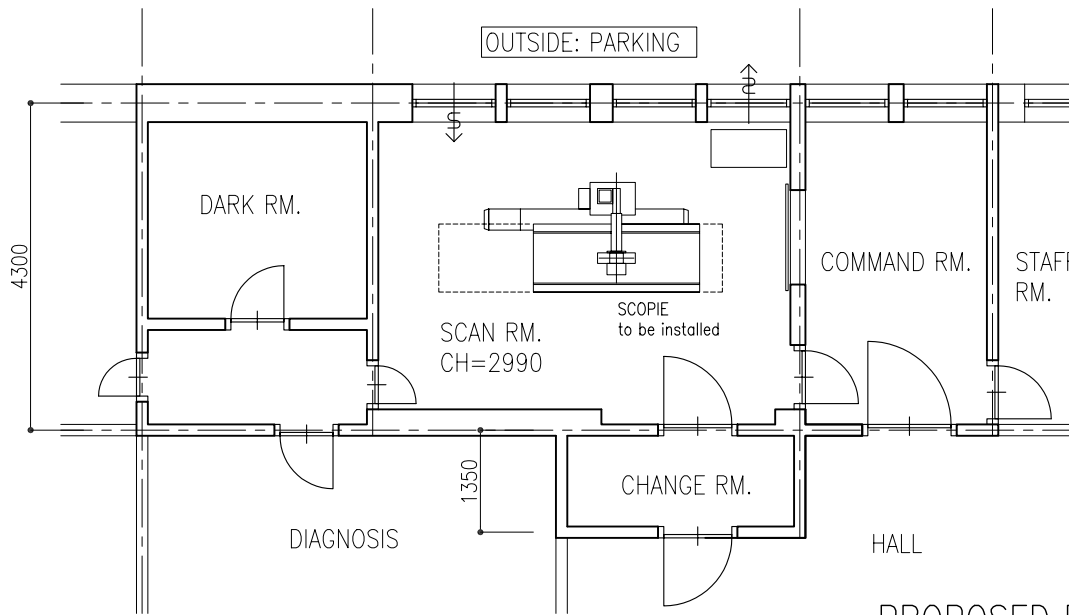
PROPOSED PLAN

FD.7 FOJNICA S=1/100	SCOPE OF WORK	B. CIVIL WORK	D. RADIATION PROTECTION
	* REMOVAL OF FURNITURE and CLEANING is applied in common.		
RENOVATION AREA: 45.9 sqm. LOCATION: BASEMENT FLOOR RENOVATION TYPE: - X RAY: GRAPHIE(NEW)	A. PREPARATION WORK	C. FINISH WORK	
	- REMOVAL OF EXISTING X-RAY APPARATUS		E. MECHANICAL & ELECTRICAL WORK
			- OTHER NECESSARY M&E WORK
 TYPE 5	- 47 -		




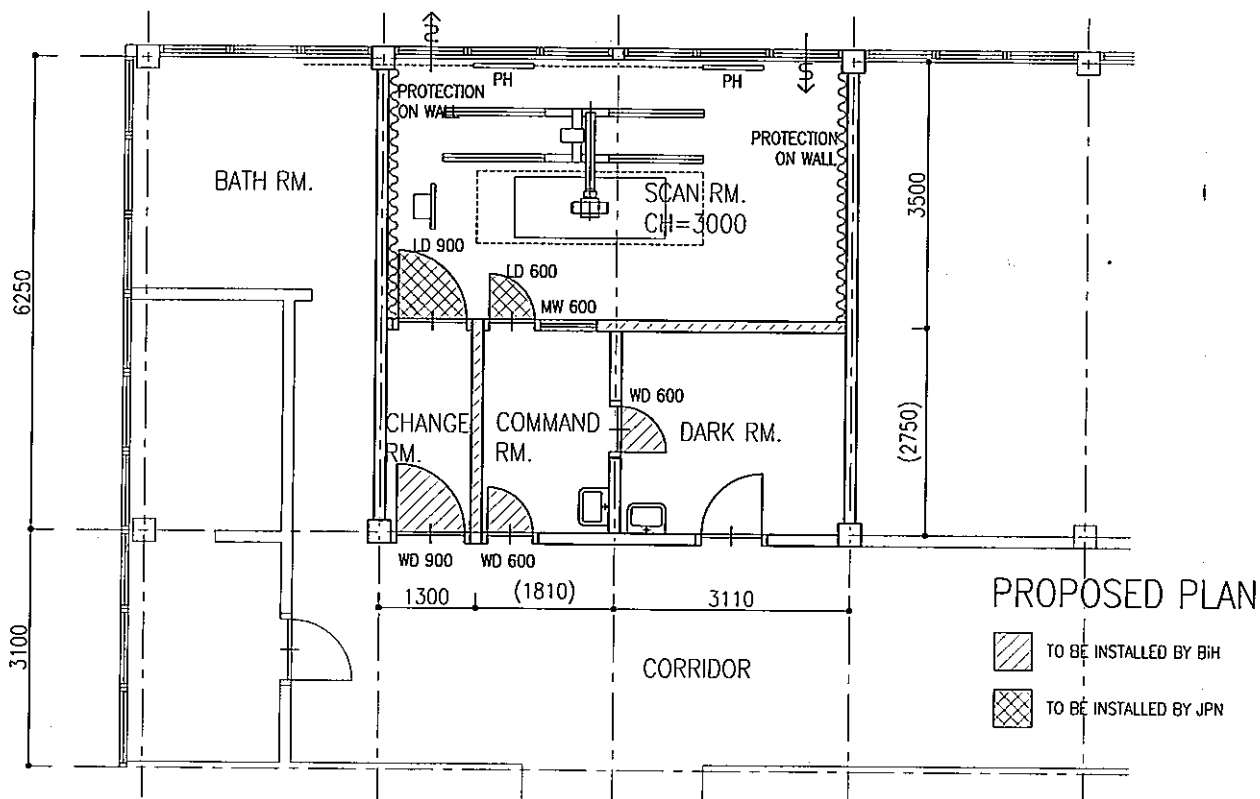
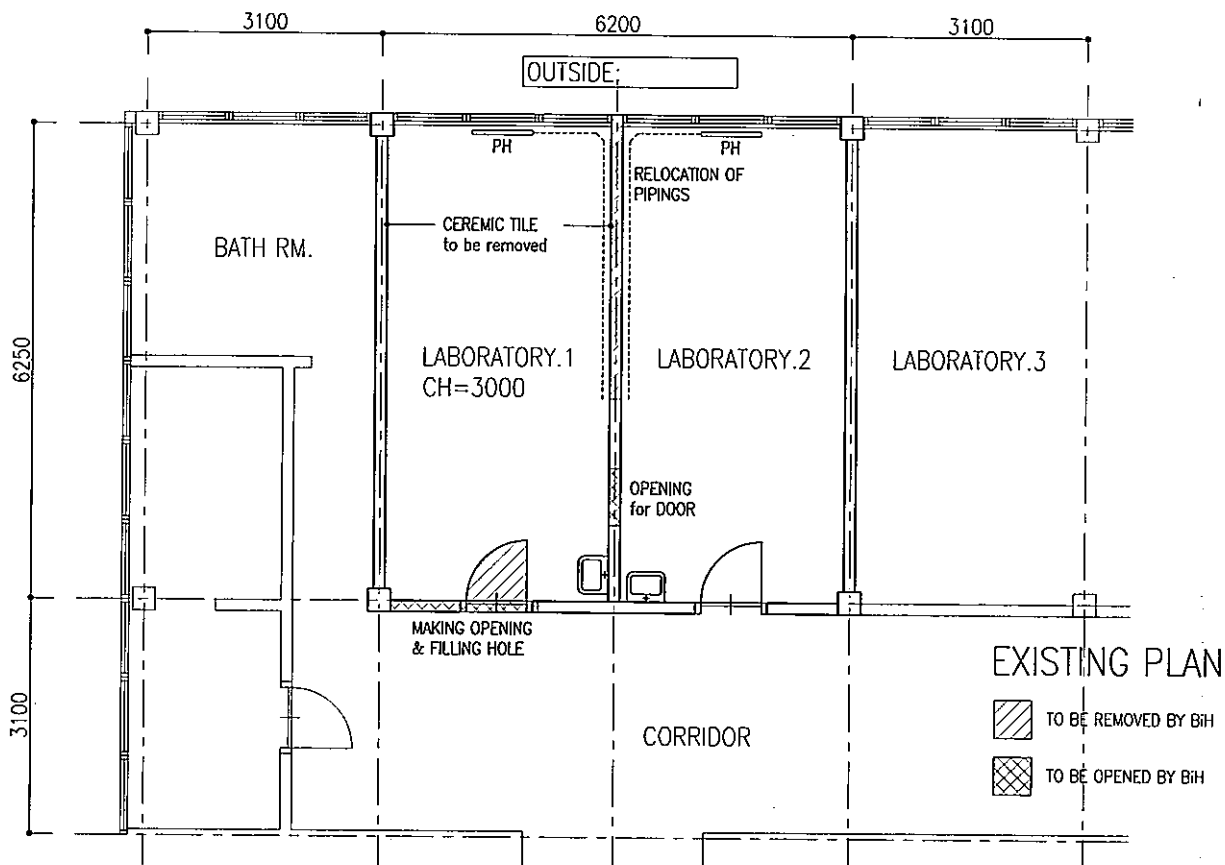
EXISTING PLAN

 TO BE REMOVED BY BIH



PROPOSED PLAN

FD.8 VISOKO S=1/100	SCOPE OF WORK * REMOVAL OF FURNITURE and CLEANING is applied in common.	B. CIVIL WORK	D. RADIATION PROTECTION
	A. PREPARATION WORK - REMOVAL OF EXISTING X-RAY APPARATUS	C. FINISH WORK	E. MECHANICAL & ELECTRICAL WORK - OTHER NECESSARY M&E WORK
RENOVATION AREA: 52.6 sqm. LOCATION: GROUND FLOOR RENOVATION TYPE: - X RAY: SCOPIE(NEW)			
 TYPE 5			



FD.9 GORAZDE

R

S=1/100

RENOVATION AREA: 38.8 sqm.

LOCATION: GROUND FLOOR

RENOVATION TYPE: A (LABORATORY)

X RAY: GRAPHIE(NEW)



TYPE 5

SCOPE OF WORK

* REMOVAL OF FURNITURE and CLEANING is applied in common.

A. PREPARATION WORK

- REMOVAL OF PARTITION (see DWG.)
- REMOVAL OF FLOOR/WALL FINISH
- REMOVAL OF DOOR (see DWG.)

B. CIVIL WORK

- CONSTRUCTION OF PARTITION (see DWG.)
- MAKING OF OPENING (see DWG.)
- FILLING OF OPENING (see DWG.)
- MORTAR FINISH(+SOP) on NEW PARTITION
- MORTAR FINISH(+SOP) on OPENING
- TOUCH-UP on FLOOR/WALL/CEILING
- SETTING OF WOOD/PLASTIC DOOR (see DWG.)

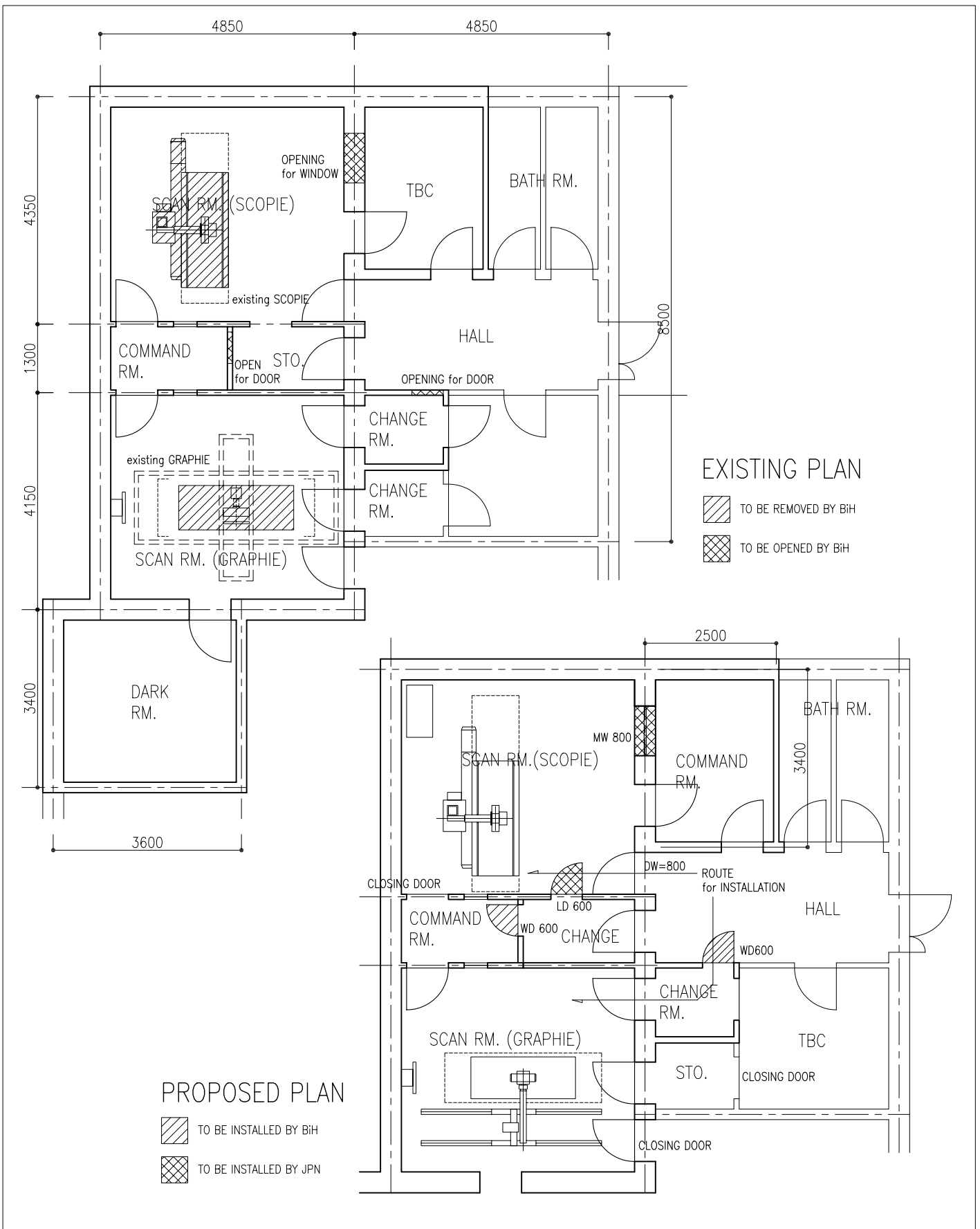
C. FINISH WORK



D. RADIATION PROTECTION

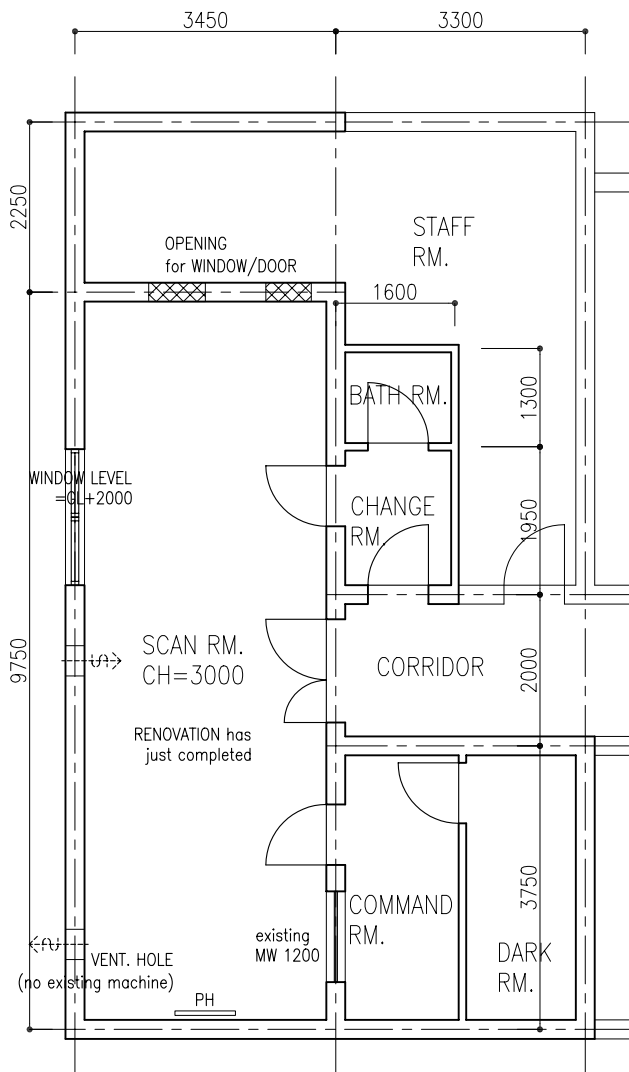
- PROTECTION on WALL (see DWG.)
- LEAD DOOR w600 X1 (JPN)
- LEAD DOOR w900 X1 (JPN)
- MONITOR WINDOW w600 X1 (JPN)

E. MECHANICAL & ELECTRICAL WORK

- POWER SUPPLY for X RAY APPARATUS
- OTHER NECESSARY M&E WORK

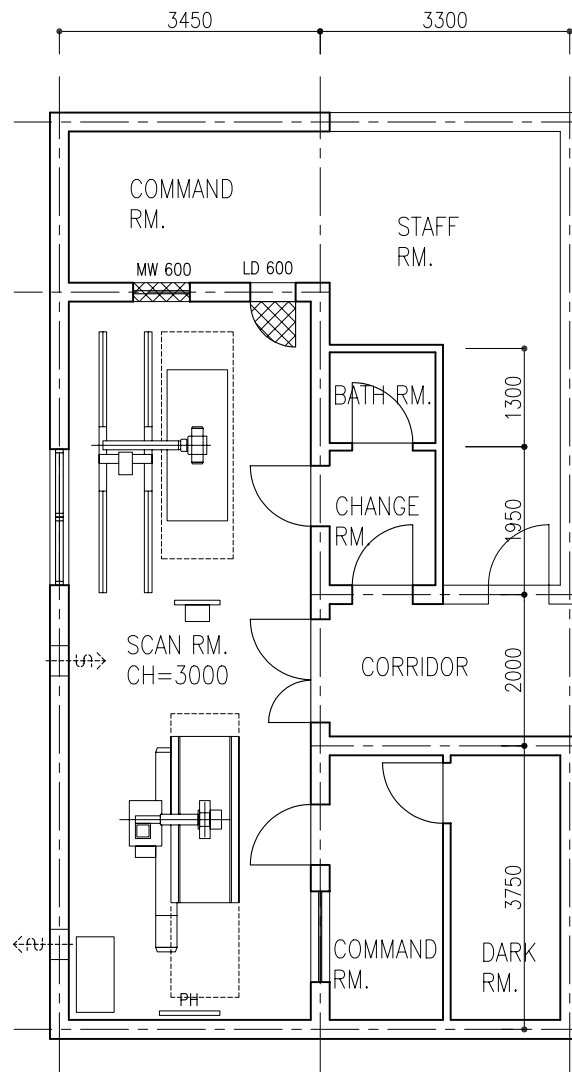


FD11. DONJI VAKUF S=1/100	SCOPE OF WORK * REMOVAL OF FURNITURE and CLEANING is applied in common.	B. CIVIL WORK - MAKING OF OPENING (see DWG.)	D. RADIATION PROTECTION - LEAD DOOR w600 X1 (JPN)
	A. PREPARATION WORK - REMOVAL OF EXISTING X-RAY APPARATUS	C. FINISH WORK - MORTAR FINISH(+SOP) on OPENING - TOUCH-UP on FLOOR/WALL/CEILING - SETTING OF WOOD/PLASTIC DOOR (see DWG.)	E. MECHANICAL & ELECTRICAL WORK - MONITOR WINDOW w800 X1 (JPN) - OTHER NECESSARY M&E WORK
RENOVATION AREA: 70.7 sqm. LOCATION: GROUND FLOOR RENOVATION TYPE: C X RAY: GRAPHIE(NEW)+SCOPIE(NEW)			
  TYPE 1			



EXISTING PLAN

- TO BE REMOVED BY BIH
- TO BE OPENED BY BIH



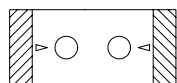
PROPOSED PLAN

- TO BE INSTALLED BY BIH
- TO BE INSTALLED BY JPN

FD12. KISELJAK

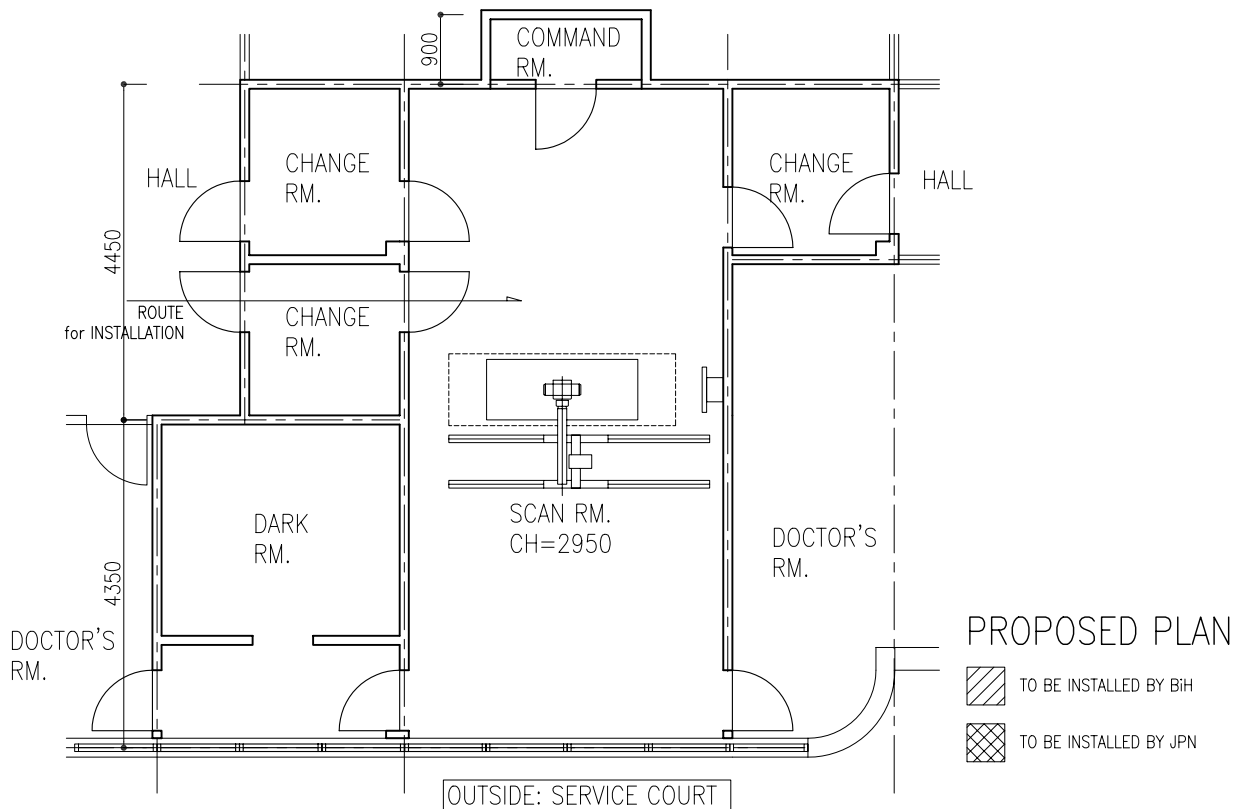
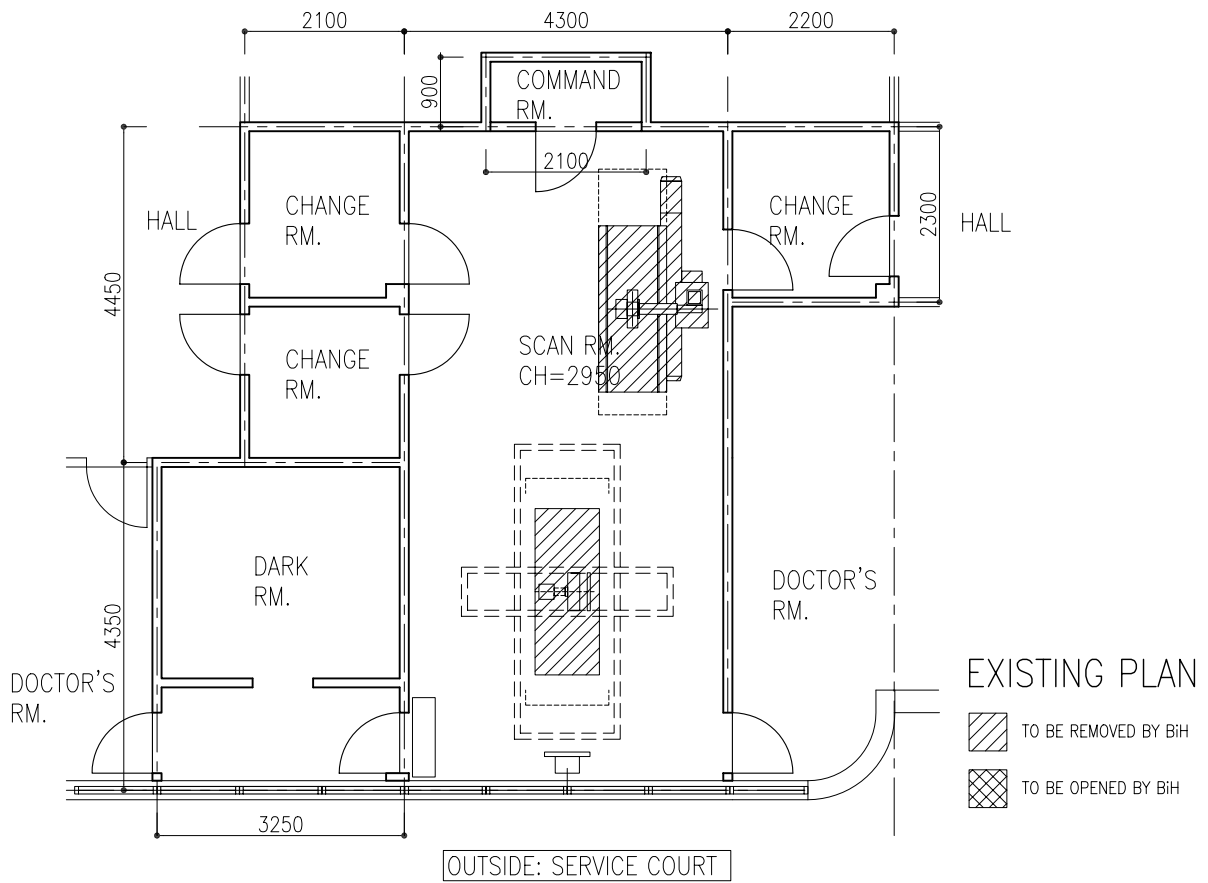
S=1/100

RENOVATION AREA: 59.0 sqm.
 LOCATION: GROUND FLOOR
 RENOVATION TYPE: C
 X RAY: GRAPHIE(NEW)+SCOPIE(NEW)



TYPE 4

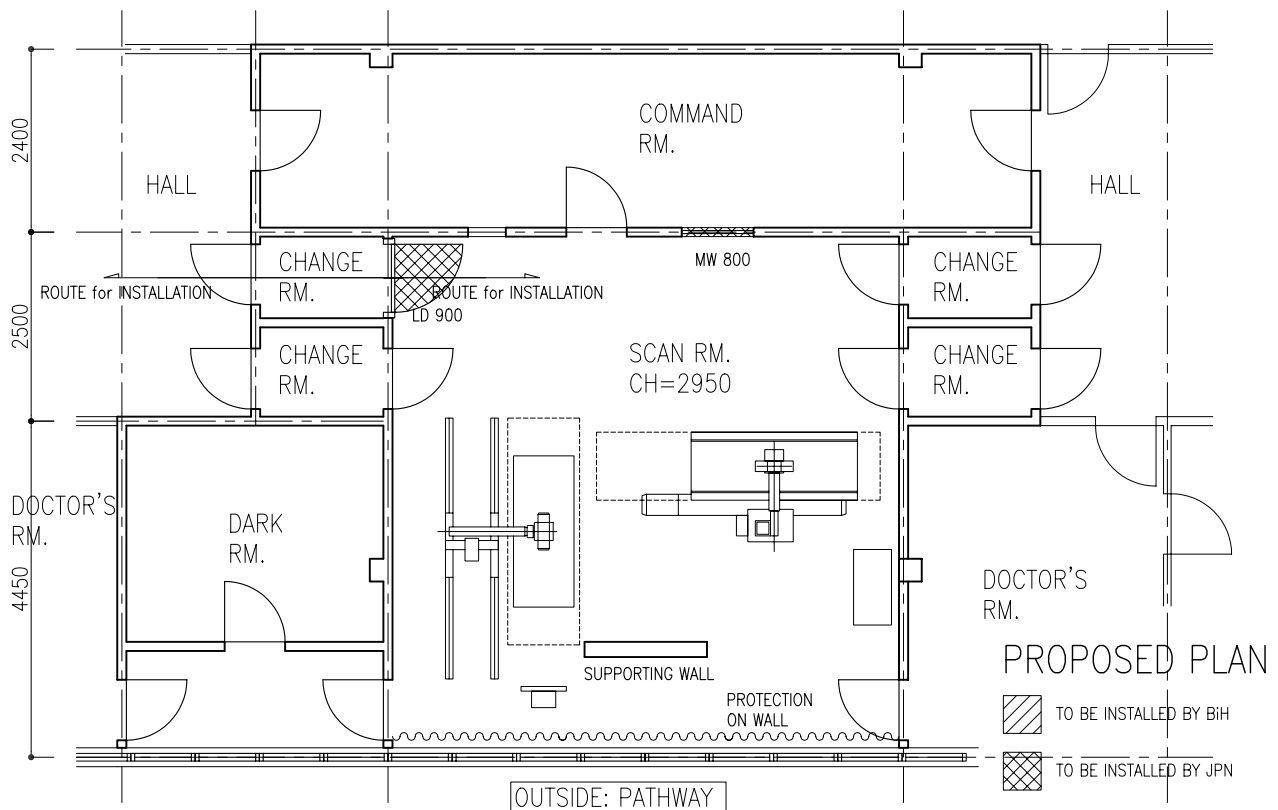
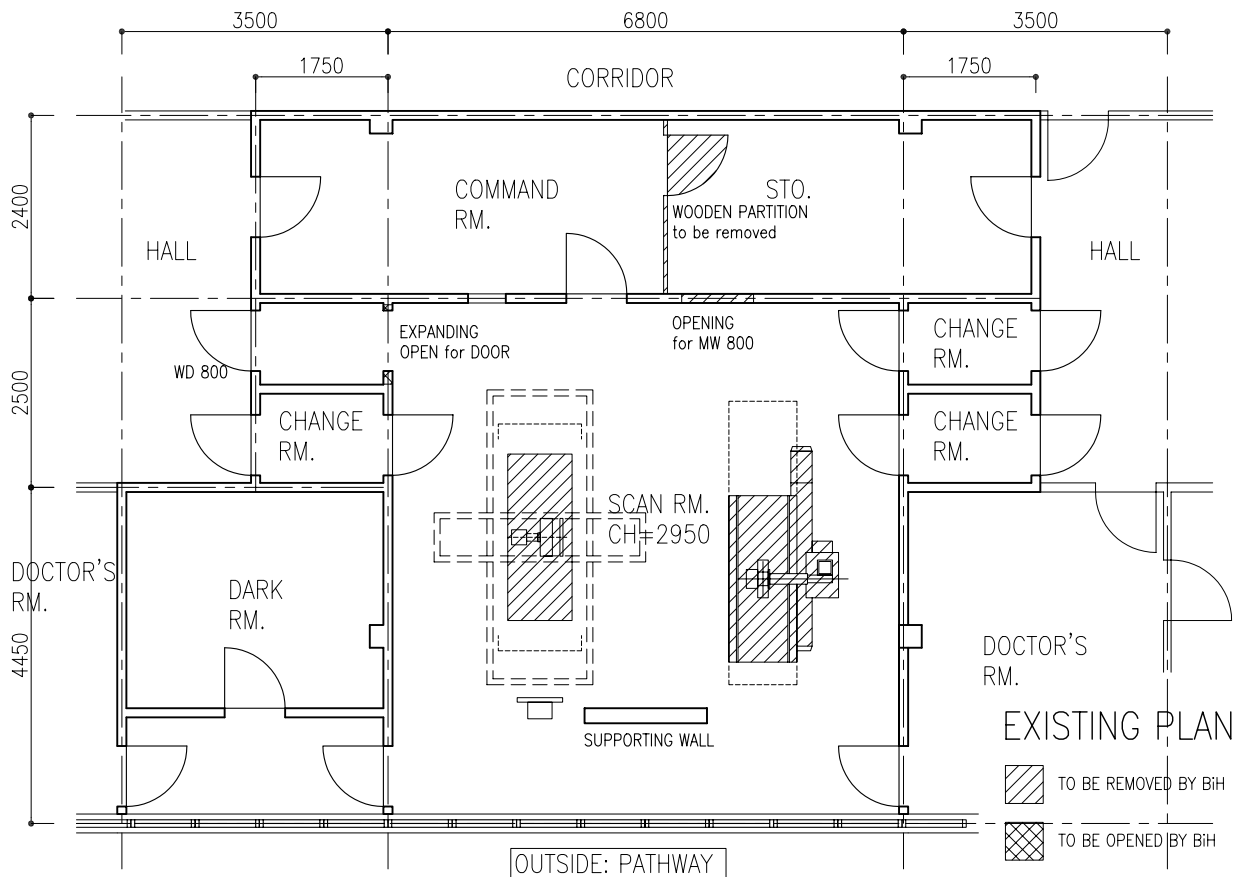
SCOPE OF WORK	B. CIVIL WORK	D. RADIATION PROTECTION
* REMOVAL OF FURNITURE and CLEANING is applied in common.	- MAKING OF OPENING (see DWG.)	- LEAD DOOR w600 X1 (JPN)
A. PREPARATION WORK	C. FINISH WORK	- MONITOR WINDOW w600 X1 (JPN)
	- MORTAR FINISH(+SOP) on OPENING	E. MECHANICAL & ELECTRICAL WORK
		- OTHER NECESSARY M&E WORK



FD13. JABLANICA S=1/100	SCOPE OF WORK	B. CIVIL WORK	D. RADIATION PROTECTION
	* REMOVAL OF FURNITURE and CLEANING is applied in common.		
RENOVATION AREA: 68.3 sqm. LOCATION: GROUND FLOOR RENOVATION TYPE: B X RAY: GRAPHIE(NEW)	A. PREPARATION WORK	C. FINISH WORK	E. MECHANICAL & ELECTRICAL WORK
			- OTHER NECESSARY M&E WORK

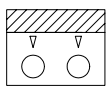


TYPE 5

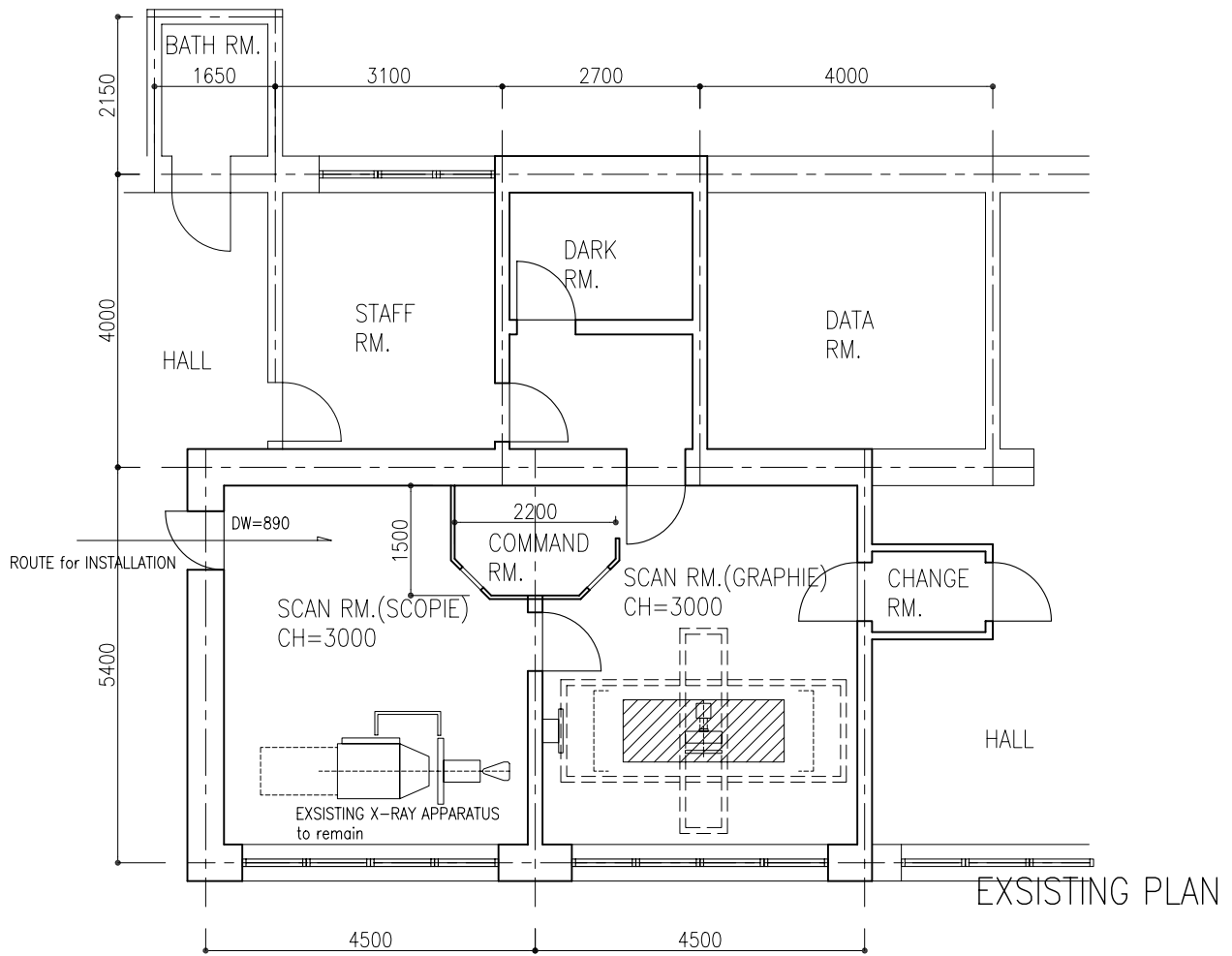


FD14. CITLUK
 [R] S=1/100
 RENOVATION AREA: 96.3 sqm.
 LOCATION: GROUND FLOOR
 RENOVATION TYPE: B
 X RAY: GRAPHIE(NEW)+SCOPIE(NEW)

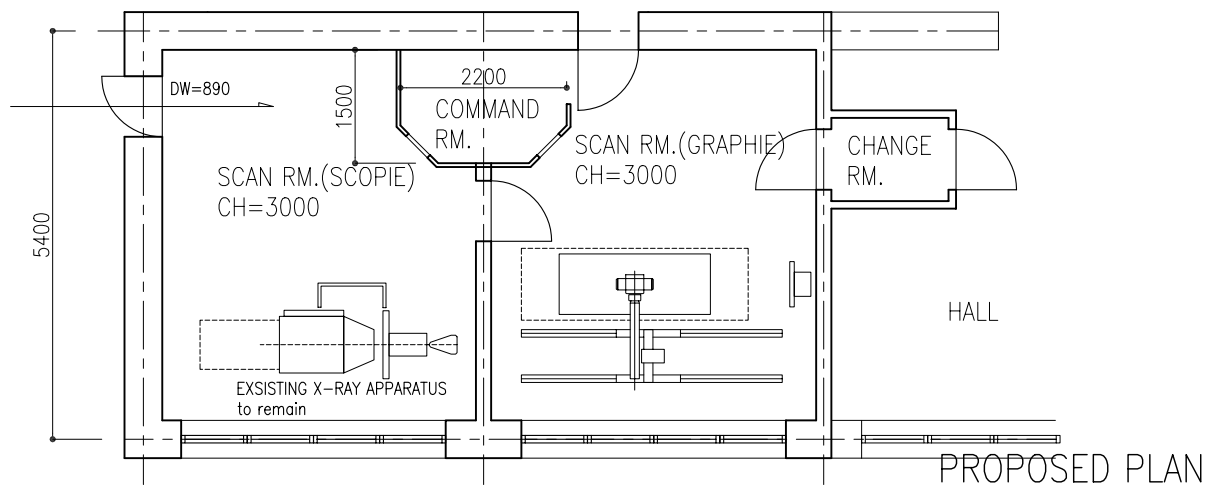
SCOPE OF WORK	B. CIVIL WORK	D. RADIATION PROTECTION
* REMOVAL OF FURNITURE and CLEANING is applied in common.	- MAKING OF OPENING (see DWG.)	- LEAD DOOR w900 X1 (JPN)
A. PREPARATION WORK	C. FINISH WORK	- MONITOR WINDOW w800 X1 (JPN)
- REMOVAL OF EXISTING X-RAY APPARATUS	- MORTAR FINISH(+SOP) on OPENING	E. MECHANICAL & ELECTRICAL WORK
- REMOVAL OF PARTITION (see DWG.)	- TOUCH-UP on FLOOR/WALL/CEILING	
- REMOVAL OF FLOOR/WALL FINISH		
		- OTHER NECESSARY M&E WORK



TYPE 3

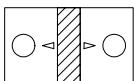


OUTSIDE: PATHWAY

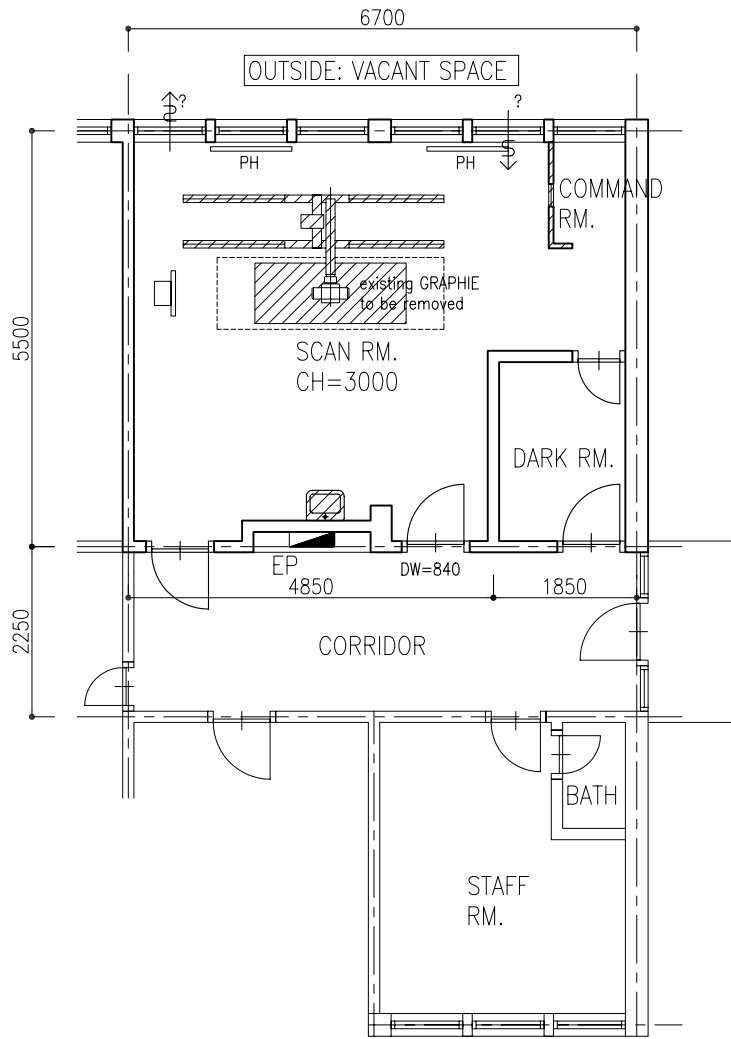


OUTSIDE: PATHWAY

FD15. STOLAC $S=1/100$	SCOPE OF WORK	B. CIVIL WORK	D. RADIATION PROTECTION
	* REMOVAL OF FURNITURE and CLEANING is applied in common.		
RENOVATION AREA: 61.4 sqm. LOCATION: GROUND FLOOR RENOVATION TYPE: - X RAY: GRAPHIE(NEW)	A. PREPARATION WORK	C. FINISH WORK	
	- REMOVAL OF EXISTING X-RAY APPARATUS		E. MECHANICAL & ELECTRICAL WORK
			- OTHER NECESSARY M&E WORK

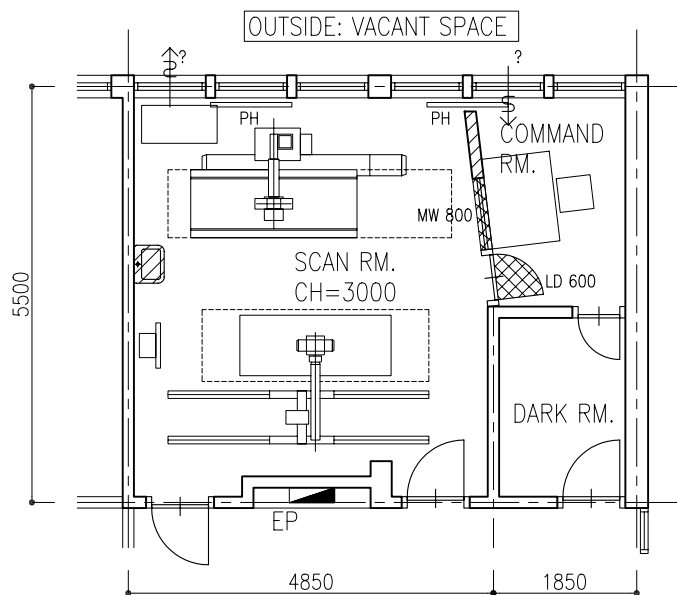


TYPE 2



EXISTING PLAN

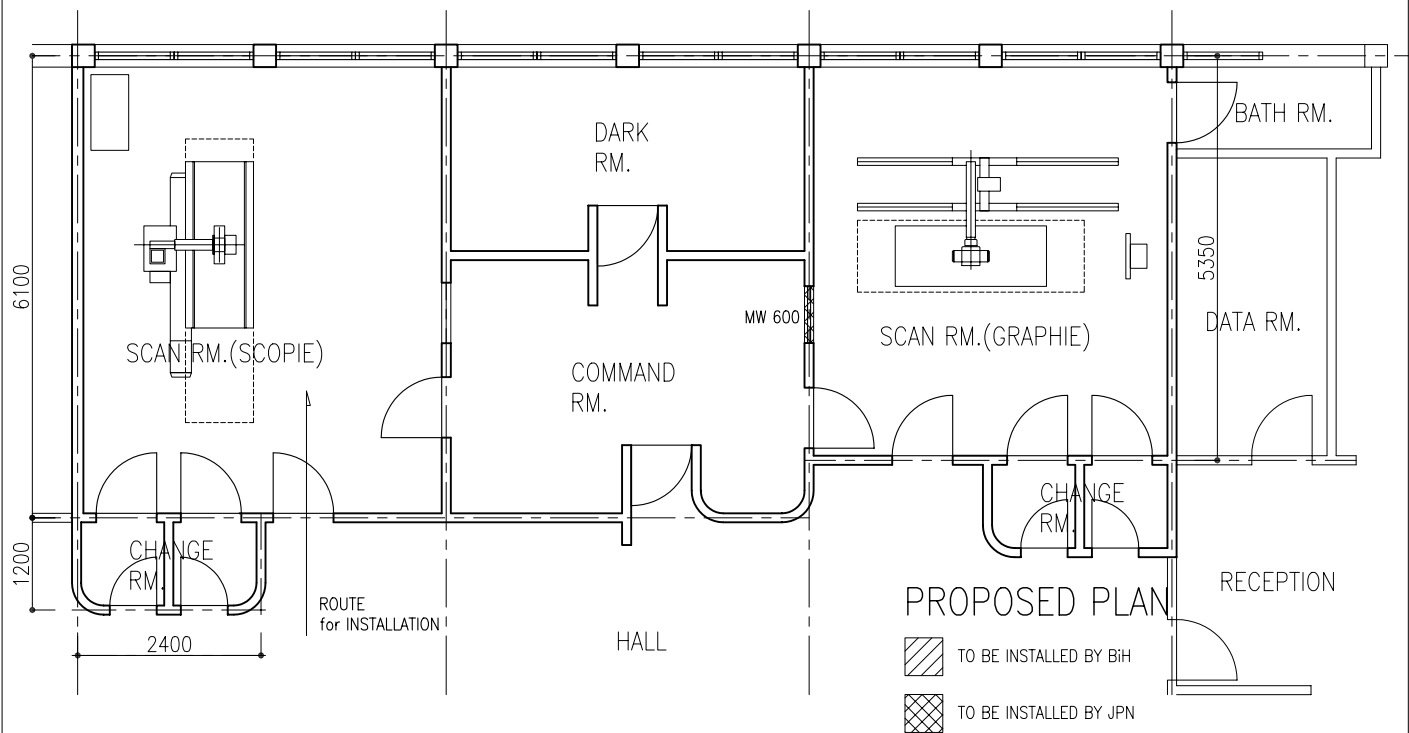
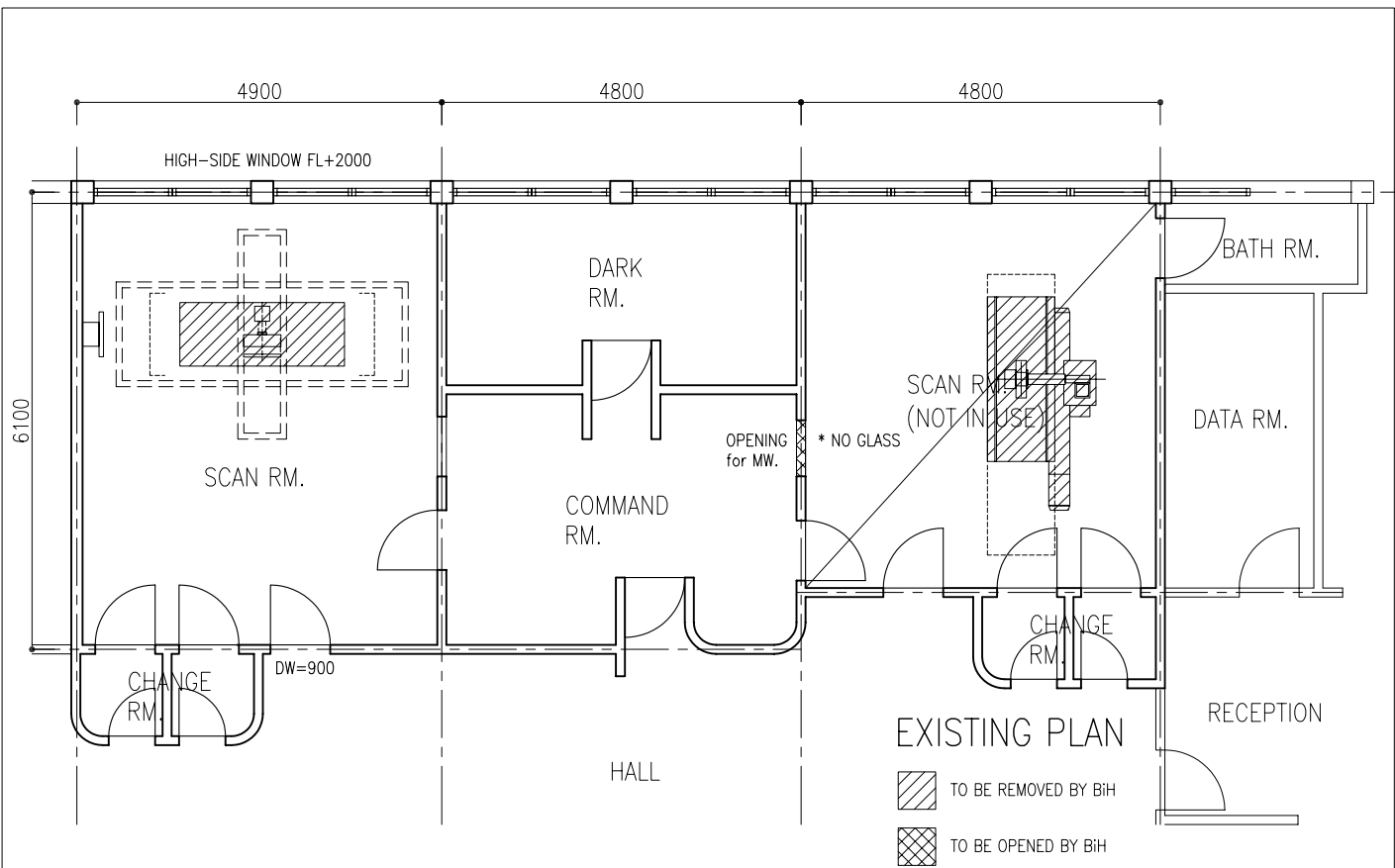
- TO BE REMOVED BY BIH
- TO BE OPENED BY BIH

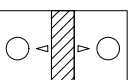


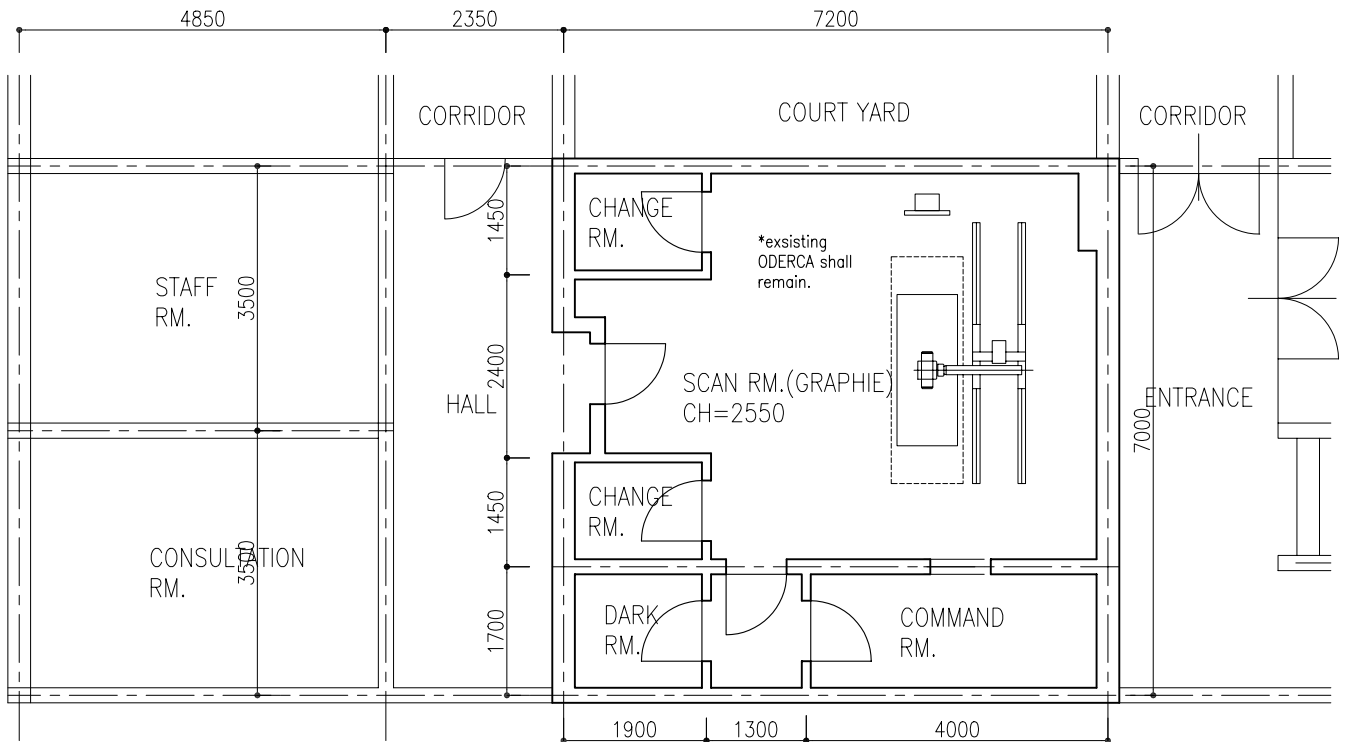
PROPOSED PLAN

- TO BE INSTALLED BY BIH
- TO BE INSTALLED BY JPN

FD.16 PROZOR/RAMA S=1/100	SCOPE OF WORK	B. CIVIL WORK	D. RADIATION PROTECTION
	* REMOVAL OF FURNITURE and CLEANING is applied in common.	- CONSTRUCTION OF PARTITION (see DWG.) - MAKING OF OPENING (see DWG.)	- LEAD DOOR w600 X1 (JPN)
RENOVATION AREA: 36.9 sqm. LOCATION: GROUND FLOOR RENOVATION TYPE: B X RAY: GRAPHIE(NEW) + SCOPIE(NEW)	A. PREPARATION WORK	C. FINISH WORK	E. MECHANICAL & ELECTRICAL WORK
	- REMOVAL OF EXISTING X-RAY APPARATUS	- MORTAR FINISH(+SOP) on NEW PARTITION	- MONITOR WINDOW w800 X1 (JPN)
	- REMOVAL OF PARTITION (see DWG.)	- MORTAR FINISH(+SOP) on OPENING	- POWER SUPPLY for X RAY APPARATUS
	- REMOVAL OF FLOOR/WALL FINISH	- TOUCH-UP on FLOOR/WALL/CEILING	- INSTALLATION OF WASH BASIN (see DWG.)
	- REMOVAL OF DOOR (see DWG.)		- OTHER NECESSARY M&E WORK
TYPE 3	- 55 -		



FD17. TOMISLAVGRAD S=1/100	SCOPE OF WORK	B. CIVIL WORK	D. RADIATION PROTECTION
	* REMOVAL OF FURNITURE and CLEANING is applied in common.	- MAKING OF OPENING (see DWG.)	
RENOVATION AREA: 90.6 sqm. LOCATION: GROUND FLOOR RENOVATION TYPE: C X RAY: GRAPHIE(NEW)+SCOPIE(NEW)	A. PREPARATION WORK	C. FINISH WORK	- MONITOR WINDOW w600 X1 (JPN)
	- REMOVAL OF EXISTING X-RAY APPARATUS	- MORTAR FINISH(+SOP) on OPENING	E. MECHANICAL & ELECTRICAL WORK
			- POWER SUPPLY for X RAY APPARATUS
			- OTHER NECESSARY M&E WORK
	TYPE 2		

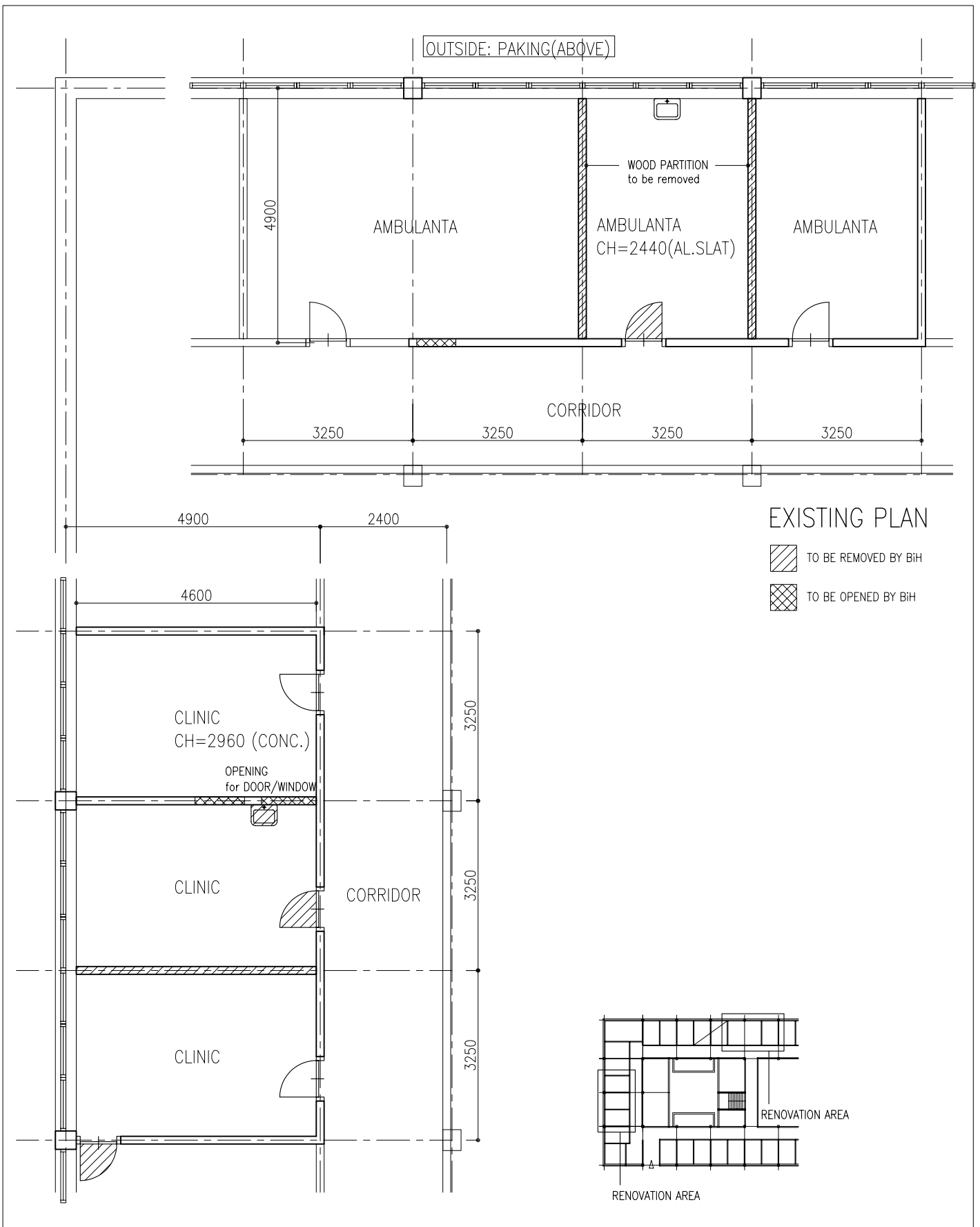


EXISTING PLAN
PROPOSED PLAN

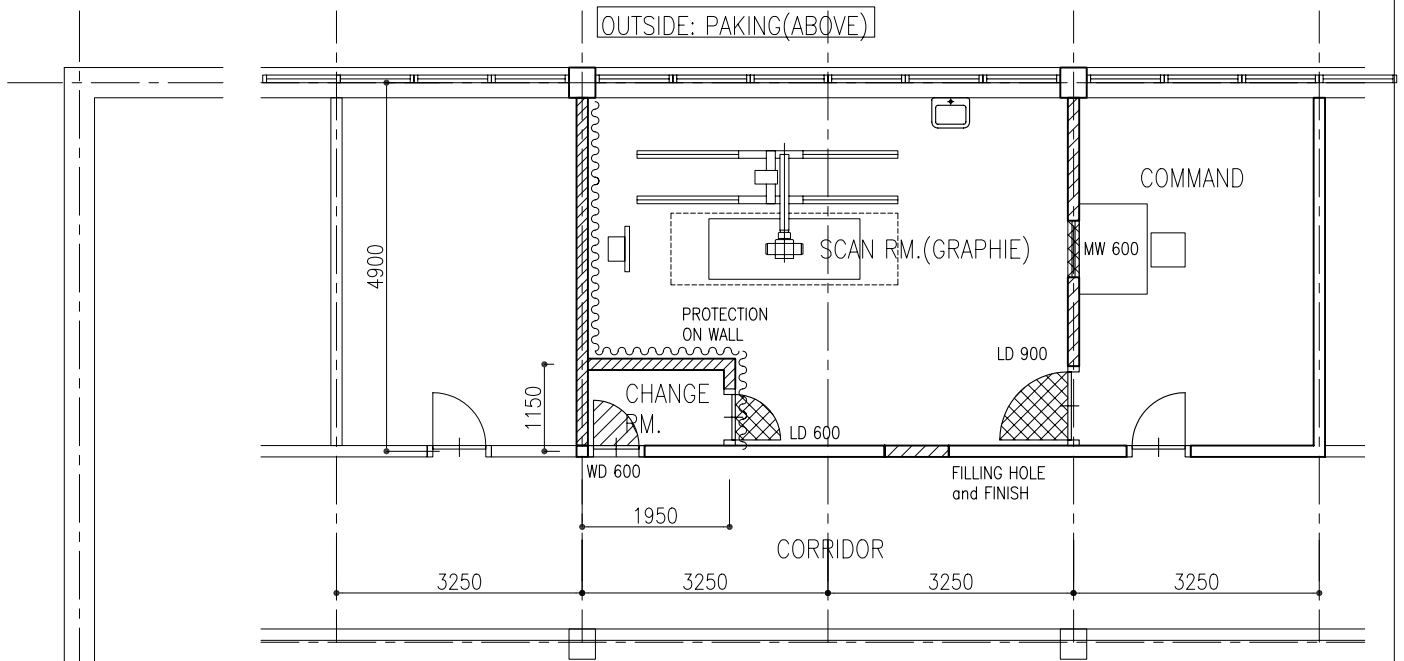
FD18. SARAJ POLJE S=1/100	SCOPE OF WORK	B. CIVIL WORK	D. RADIATION PROTECTION
	* REMOVAL OF FURNITURE and CLEANING is applied in common.		
RENOVATION AREA: 50.4 sqm. LOCATION: GROUND FLOOR RENOVATION TYPE: - X RAY: GRAPHIE(NEW)	A. PREPARATION WORK	C. FINISH WORK	
	- REMOVAL OF EXISTING X-RAY APPARATUS		E. MECHANICAL & ELECTRICAL WORK
			- OTHER NECESSARY M&E WORK



TYPE 5

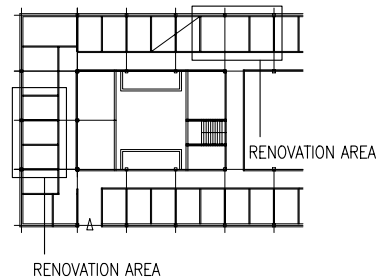
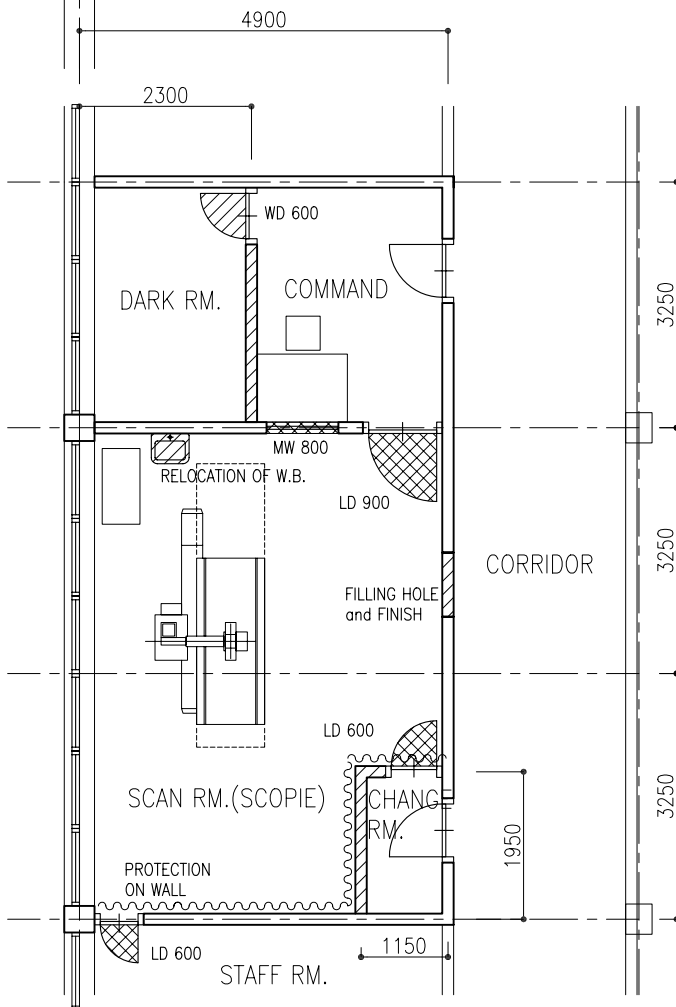


RS.1 BANJA LUKA [R] S=1/100	SCOPE OF WORK		
	* REMOVAL OF FURNITURE and CLEANING is applied in common.		
RENOVATION AREA: 95.6 sqm. LOCATION: BASEMENT FLOOR RENOVATION TYPE: A (AMBULANTA) X RAY: GRAPHIE(NEW) + SCOPIE(NEW)	A. PREPARATION WORK		
	- REMOVAL OF PARTITION (see DWG.)		
	- REMOVAL OF FLOOR/WALL FINISH		
	- REMOVAL OF DOOR (see DWG.)		
	- REMOVAL OF WASH BASIN		
 TYPE1			
- 58 -			

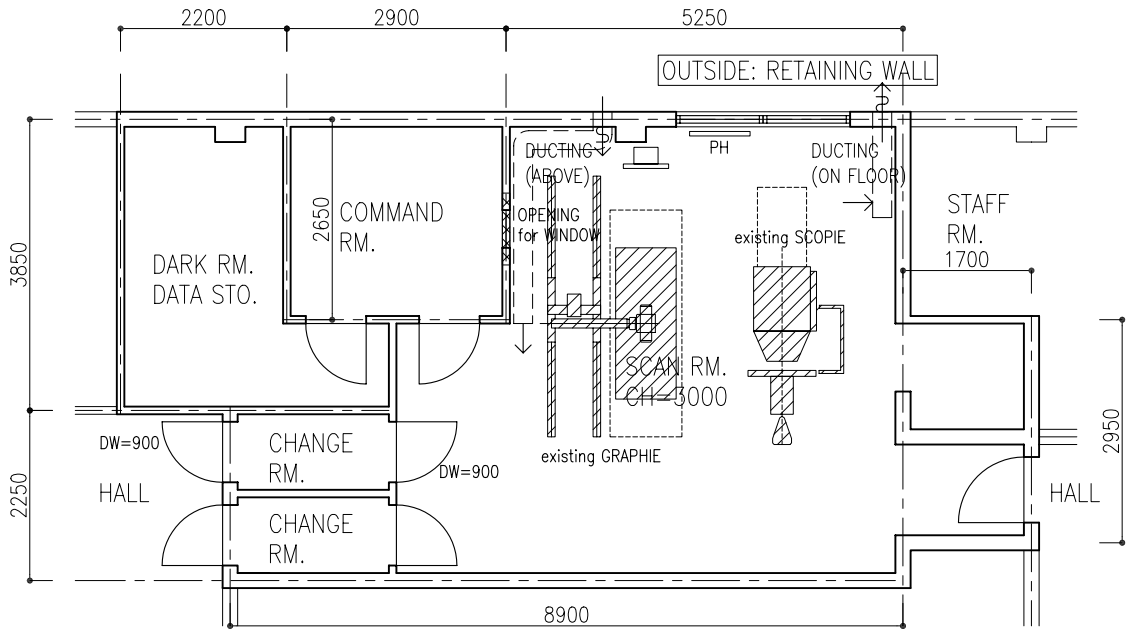


PROPOSED PLAN

- TO BE INSTALLED BY BIH
- TO BE INSTALLED BY JPN

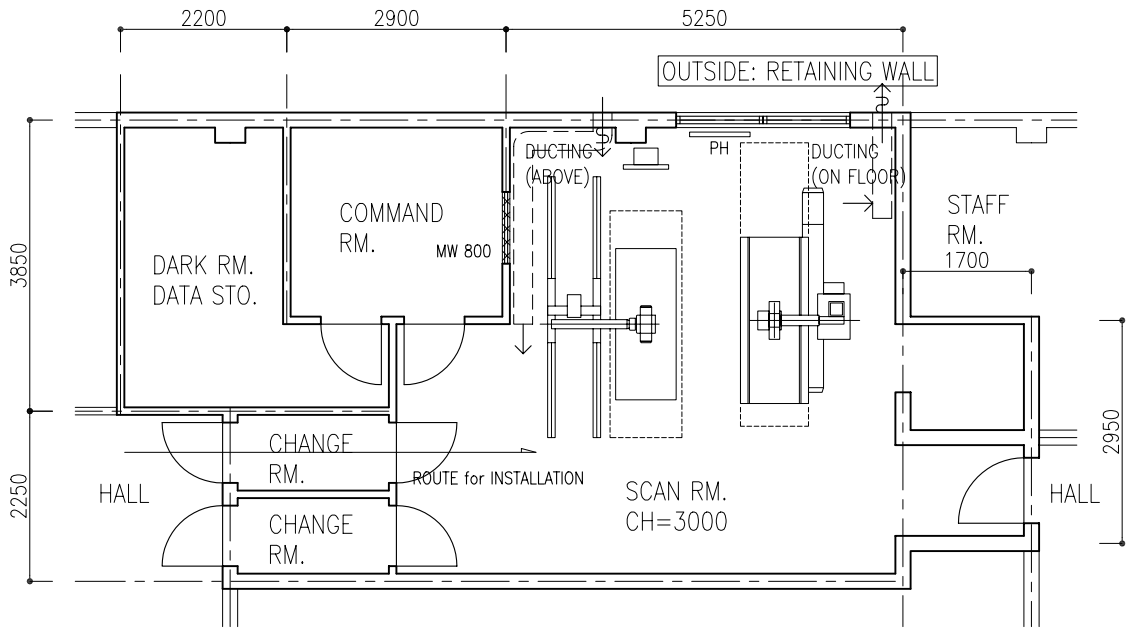


RS.1 BANJA LUKA R S=1/100	B. CIVIL WORK - CONSTRUCTION OF PARTITION (see DWG.) - MAKING OF OPENING (see DWG.) - FILLING OF OPENING (see DWG.)	D. RADIATION PROTECTION - PROTECTION on WALL (see DWG.) - LEAD DOOR w600 X3 (JPN) - LEAD DOOR w900 X2 (JPN)
	C. FINISH WORK - MORTAR FINISH(+SOP) on NEW PARTITION - MORTAR FINISH(+SOP) on OPENING - TOUCH-UP on FLOOR/WALL/CEILING - SETTING OF WOOD/PLASTIC DOOR (see DWG.)	- MONITOR WINDOW w600 X1 (JPN) - MONITOR WINDOW w800 X1 (JPN)
RENOVATION AREA: 95.6 sqm. LOCATION: BASEMENT FLOOR RENOVATION TYPE: CONVERSION (AMBULANTA) X RAY: GRAPHIE(NEW) + SCOPIE(NEW)		E. MECHANICAL & ELECTRICAL WORK - POWER SUPPLY for X RAY APPARATUS - INSTALLATION OF WASH BASIN (see DWG.) - OTHER NECESSARY M&E WORK
 TYPE1		



EXISTING PLAN

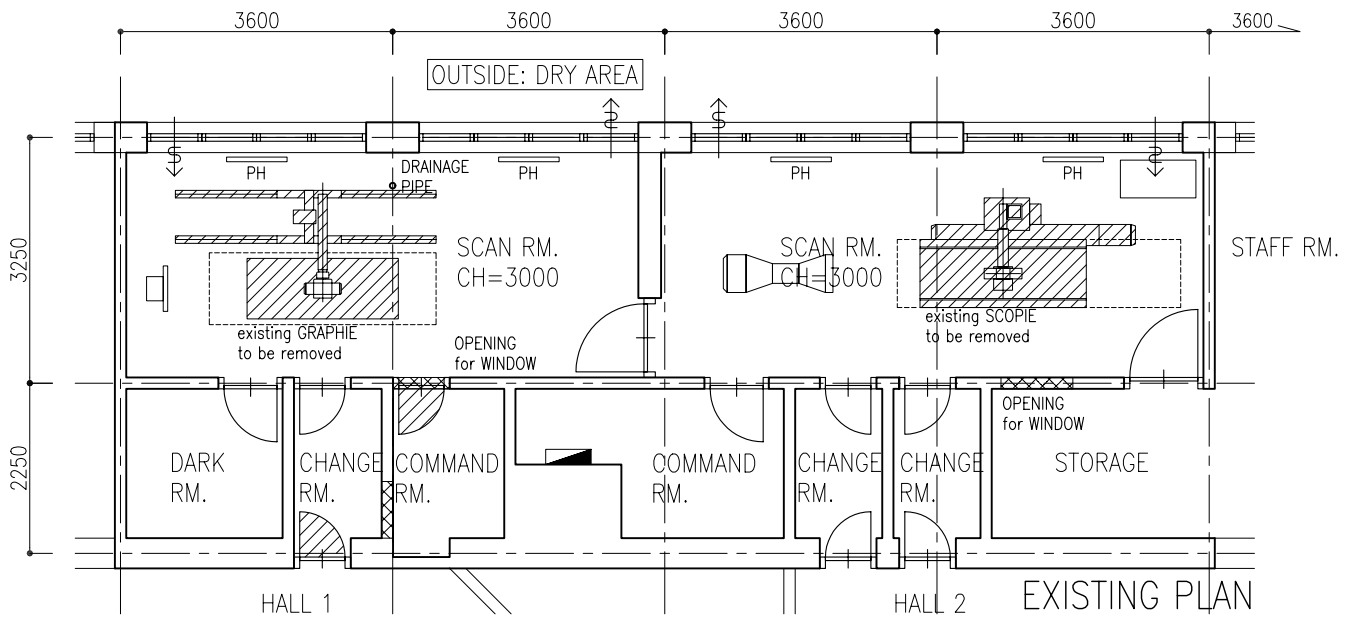
- TO BE REMOVED BY BIH
- TO BE OPENED BY BIH



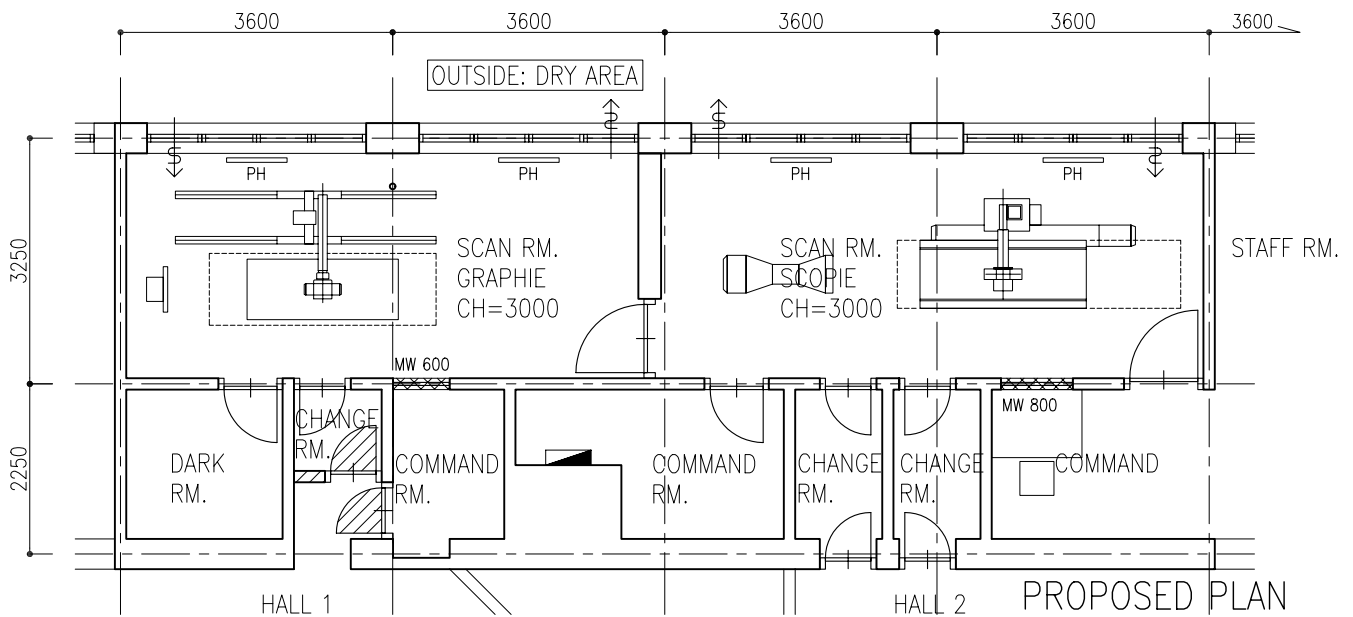
PROPOSED PLAN

- TO BE INSTALLED BY BIH
- TO BE INSTALLED BY JPN

RS2. SRBAC S=1/100	SCOPE OF WORK	B. CIVIL WORK	D. RADIATION PROTECTION
	* REMOVAL OF FURNITURE and CLEANING is applied in common.	- MAKING OF OPENING (see DWG.)	
RENOVATION AREA: 64.9 sqm. LOCATION: GROUND FLOOR RENOVATION TYPE: C X RAY: GRAPHIE(NEW)+SCOPIE(NEW) TYPE 3	A. PREPARATION WORK	C. FINISH WORK	E. MECHANICAL & ELECTRICAL WORK
	- REMOVAL OF EXISTING X-RAY APPARATUS	- MORTAR FINISH(+SOP) on OPENING	- MONITOR WINDOW w800 X1 (JPN)
			- POWER SUPPLY for X RAY APPARATUS
			- OTHER NECESSARY M&E WORK

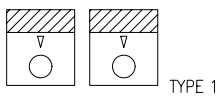


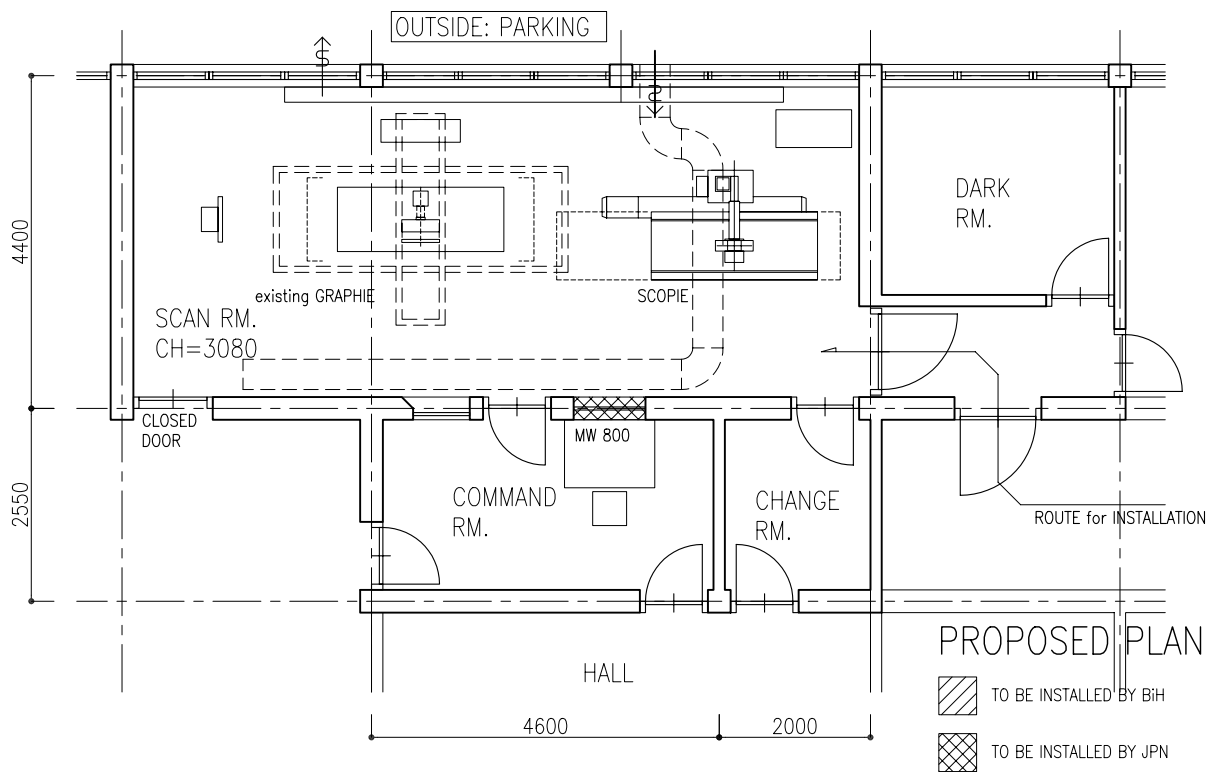
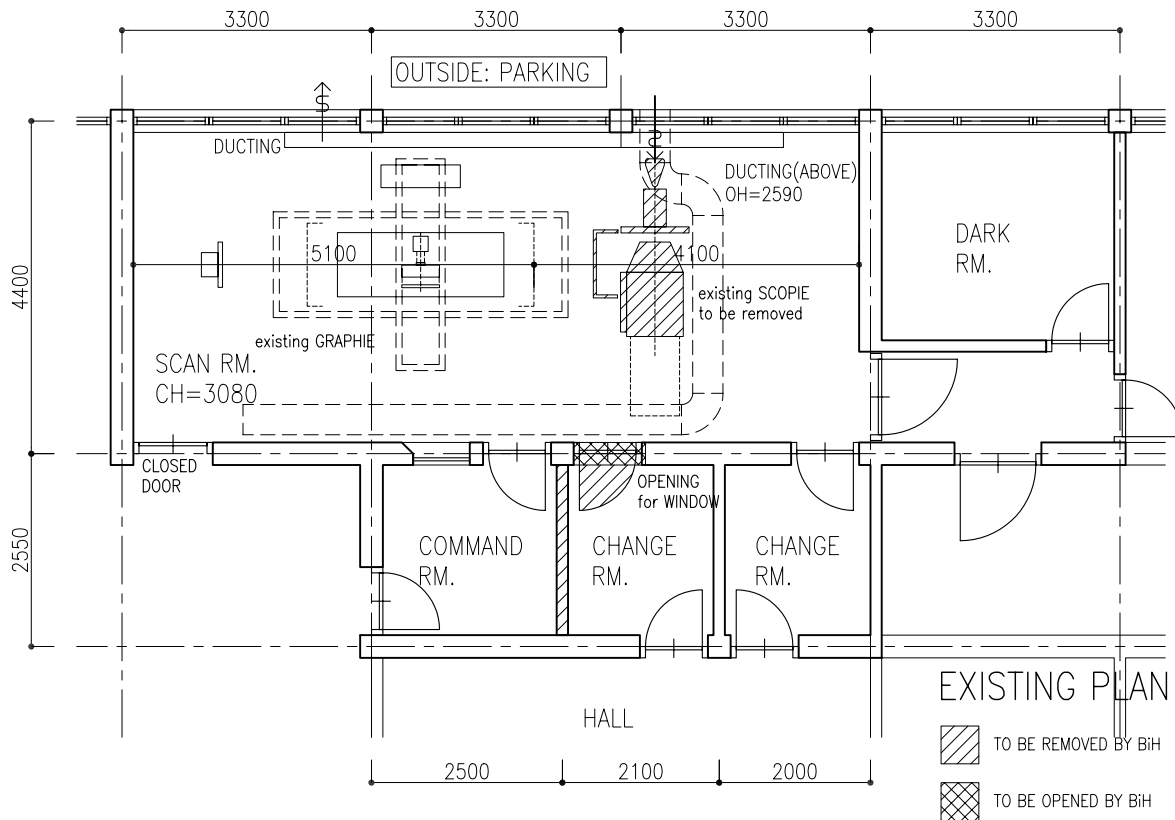
- TO BE REMOVED BY BIH
- TO BE OPENED BY BIH



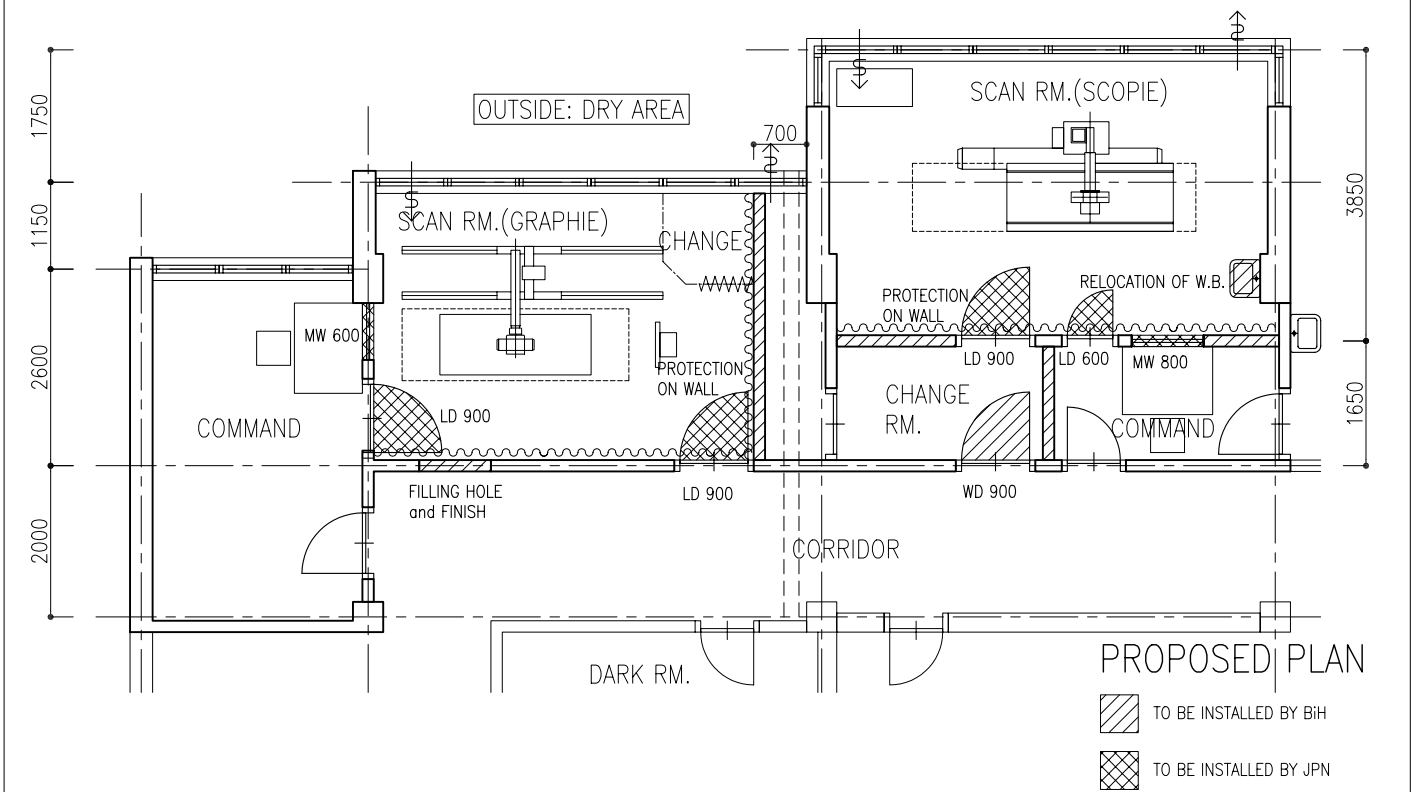
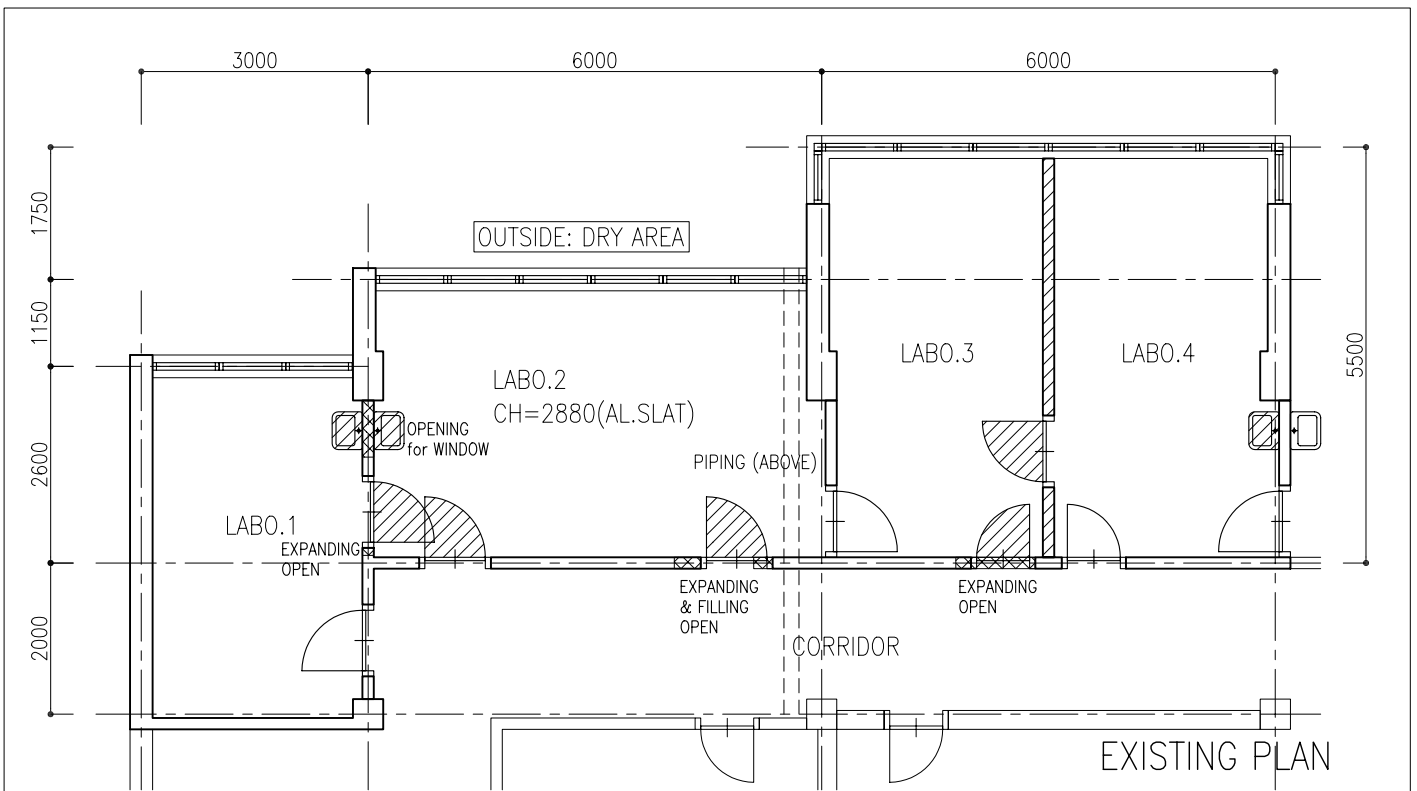
- TO BE INSTALLED BY BIH
- TO BE INSTALLED BY JPN

RS.3 PRIJEDOR $S=1/100$	SCOPE OF WORK * REMOVAL OF FURNITURE and CLEANING is applied in common.	B. CIVIL WORK - CONSTRUCTION OF PARTITION (see DWG.) - MAKING OF OPENING (see DWG.)	D. RADIATION PROTECTION
	A. PREPARATION WORK - REMOVAL OF EXISTING X-RAY APPARATUS - REMOVAL OF FLOOR/WALL FINISH - REMOVAL OF DOOR (see DWG.)	C. FINISH WORK - MORTAR FINISH(+SOP) on NEW PARTITION - MORTAR FINISH(+SOP) on OPENING - TOUCH-UP on FLOOR/WALL/CEILING - SETTING OF WOOD/PLASTIC DOOR (see DWG.)	- MONITOR WINDOW w600 X1 (JPN) - MONITOR WINDOW w800 X1 (JPN)

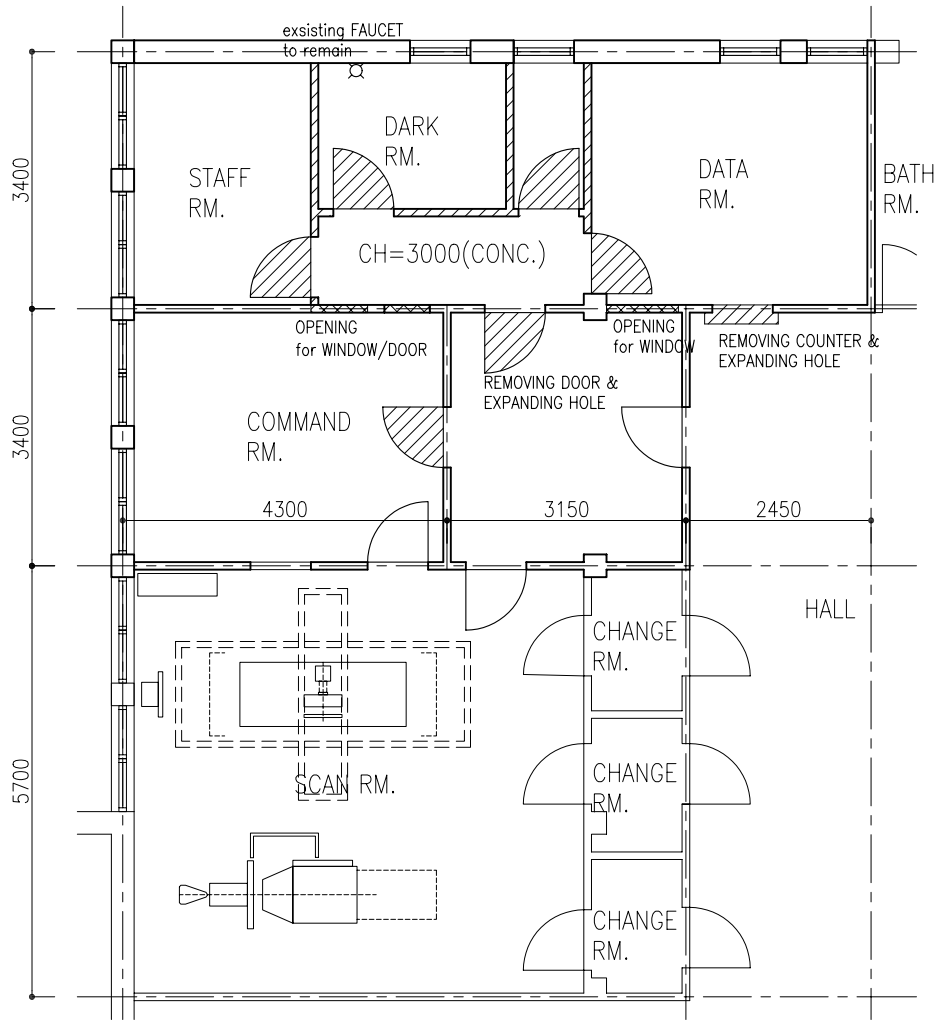




RS.4 BIJELJINA [R] S=1/100	SCOPE OF WORK	B. CIVIL WORK	D. RADIATION PROTECTION
	* REMOVAL OF FURNITURE and CLEANING is applied in common.	- MAKING OF OPENING (see DWG.)	
RENOVATION AREA: 74.9 sqm. LOCATION: GROUND FLOOR RENOVATION TYPE: B X RAY: GRAPHIE + SCOPIE(NEW)	A. PREPARATION WORK	C. FINISH WORK	E. MECHANICAL & ELECTRICAL WORK
	- REMOVAL OF EXISTING X-RAY APPARATUS	- MORTAR FINISH(+SOP) on NEW PARTITION	- MONITOR WINDOW w800 X1 (JPN)
	- REMOVAL OF PARTITION (see DWG.)	- MORTAR FINISH(+SOP) on OPENING	
	- REMOVAL OF FLOOR/WALL FINISH	- TOUCH-UP on FLOOR/WALL/CEILING	
	- REMOVAL OF DOOR (see DWG.)		
 TYPE 3			- OTHER NECESSARY M&E WORK

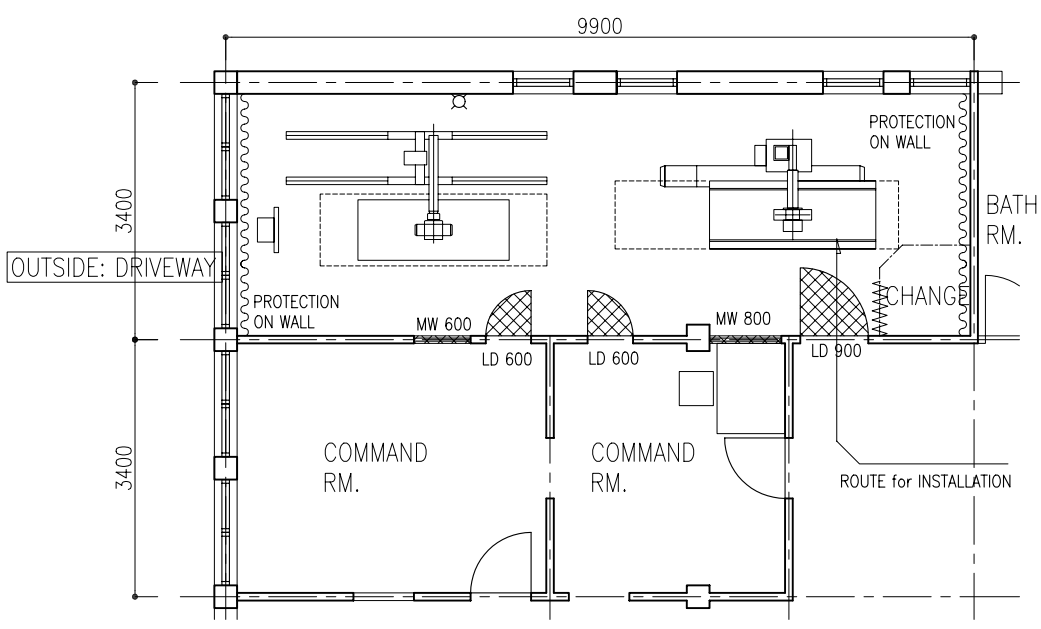


RS.5 ZVRONIK S=1/100	SCOPE OF WORK * REMOVAL OF FURNITURE and CLEANING is applied in common.	B. CIVIL WORK - CONSTRUCTION OF PARTITION (see DWG.) - MAKING OF OPENING (see DWG.) - FILLING OF OPENING (see DWG.)	D. RADIATION PROTECTION - PROTECTION on WALL (see DWG.) - LEAD DOOR w600 X2 (JPN) - LEAD DOOR w900 X1 (JPN) - MONITOR WINDOW w600 X1 (JPN)
	A. PREPARATION WORK - REMOVAL OF EXISTING X-RAY APPARATUS - REMOVAL OF PARTITION (see DWG.) - REMOVAL OF FLOOR/WALL FINISH - REMOVAL OF DOOR (see DWG.) - REMOVAL OF WASH BASIN	C. FINISH WORK - MORTAR FINISH(+SOP) on NEW PARTITION - MORTAR FINISH(+SOP) on OPENING - TOUCH-UP on FLOOR/WALL/CEILING - SETTING OF WOOD/PLASTIC DOOR (see DWG.)	E. MECHANICAL & ELECTRICAL WORK - POWER SUPPLY for X RAY APPARATUS - INSTALLATION OF WASH BASIN (see DWG.) - OTHER NECESSARY M&E WORK



EXISTING PLAN

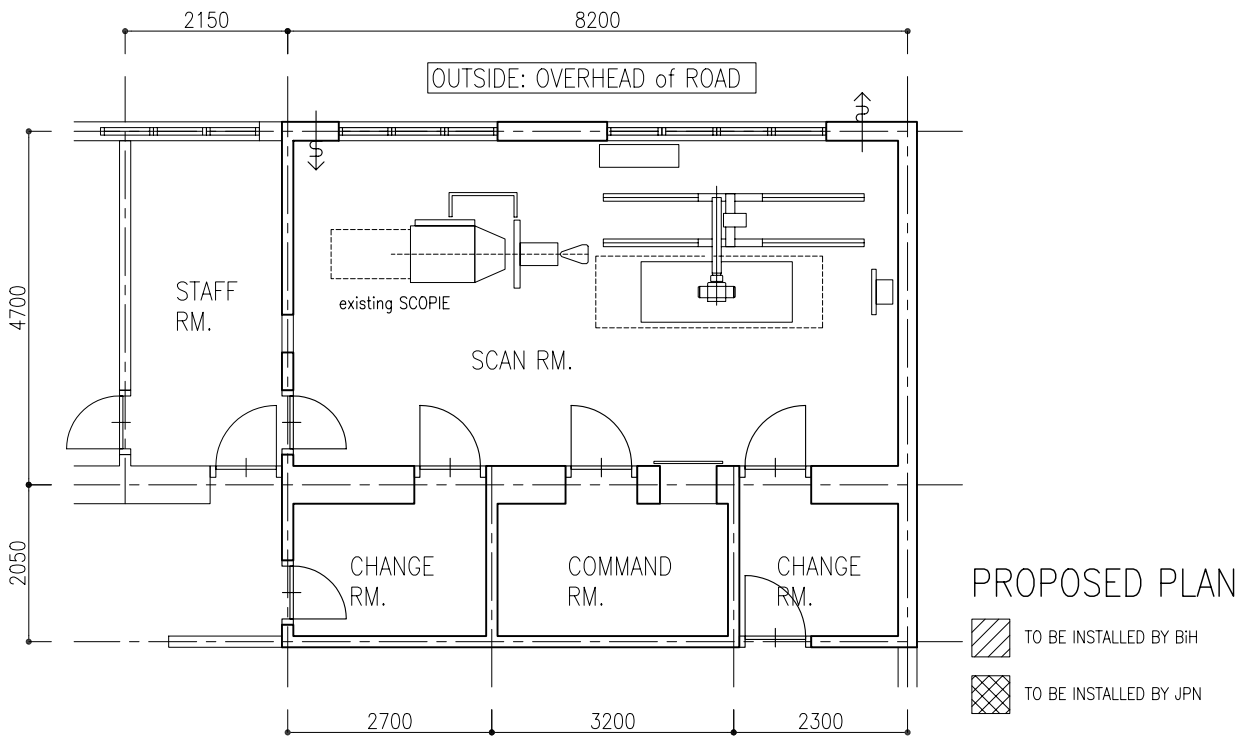
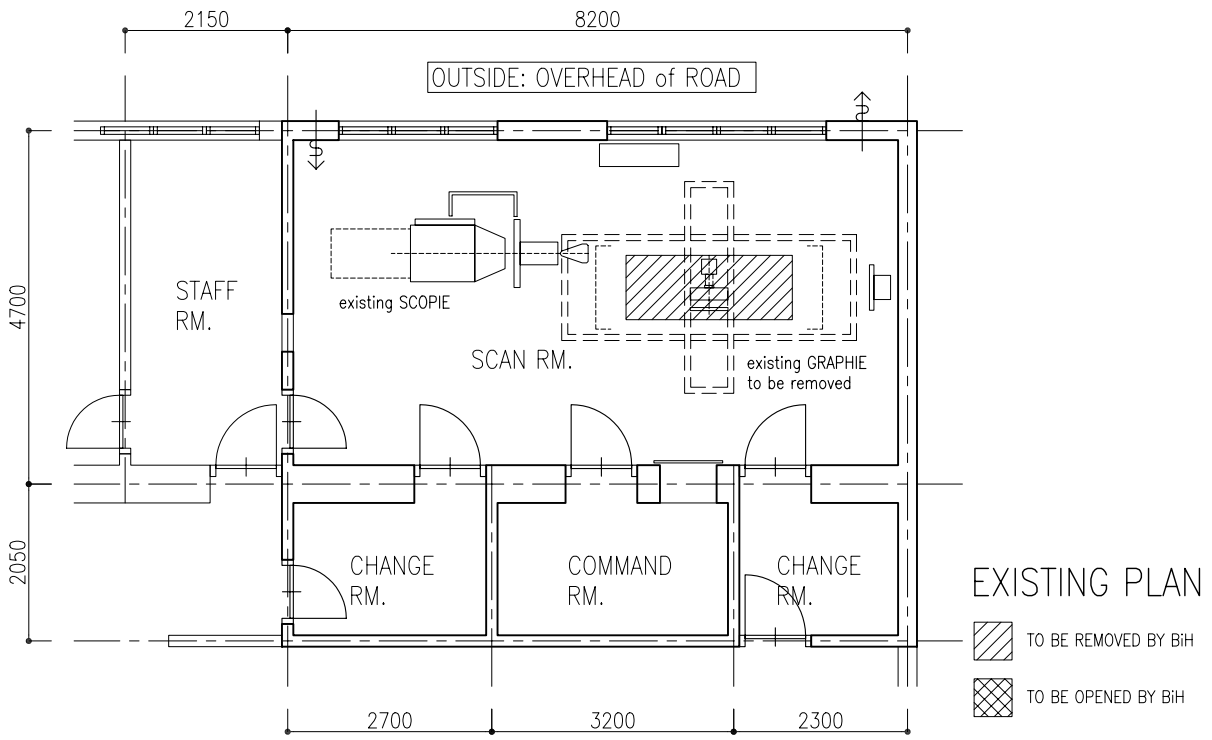
- TO BE REMOVED BY BIH
- TO BE OPENED BY BIH

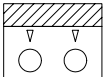


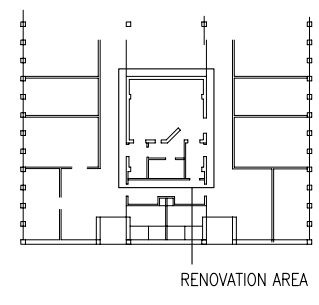
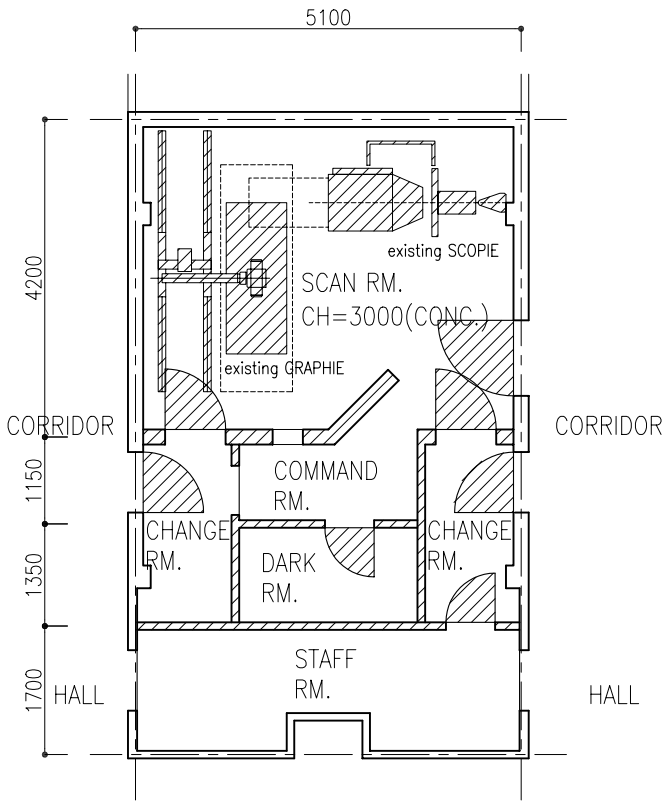
PROPOSED PLAN

- TO BE INSTALLED BY BIH
- TO BE INSTALLED BY JPN

RS6. PRNJAVOR 	SCOPE OF WORK	B. CIVIL WORK	D. RADIATION PROTECTION
	* REMOVAL OF FURNITURE and CLEANING is applied in common.	- CONSTRUCTION OF PARTITION (see DWG.) - MAKING OF OPENING (see DWG.) - FILLING OF OPENING (see DWG.)	- PROTECTION on WALL (see DWG.) - LEAD DOOR w600 X1 (JPN) - LEAD DOOR w900 X1 (JPN) - MONITOR WINDOW w600 X1 (JPN)
RENOVATION AREA: 59.0 sqm. LOCATION: GROUND FLOOR RENOVATION TYPE: A (RADIATION DEPT.) X RAY: GRAPHIE(NEW)+SCOPIE(NEW)	A. PREPARATION WORK	C. FINISH WORK	E. MECHANICAL & ELECTRICAL WORK
	- REMOVAL OF PARTITION (see DWG.) - REMOVAL OF FLOOR/WALL FINISH - REMOVAL OF DOOR (see DWG.) - REMOVAL OF WASH BASIN	- MORTAR FINISH(+SOP) on NEW PARTITION - MORTAR FINISH(+SOP) on OPENING - TOUCH-UP on FLOOR/WALL/CEILING	- POWER SUPPLY for X RAY APPARATUS - INSTALLATION OF WASH BASIN (see DWG.) - OTHER NECESSARY M&E WORK
	- 64 -		



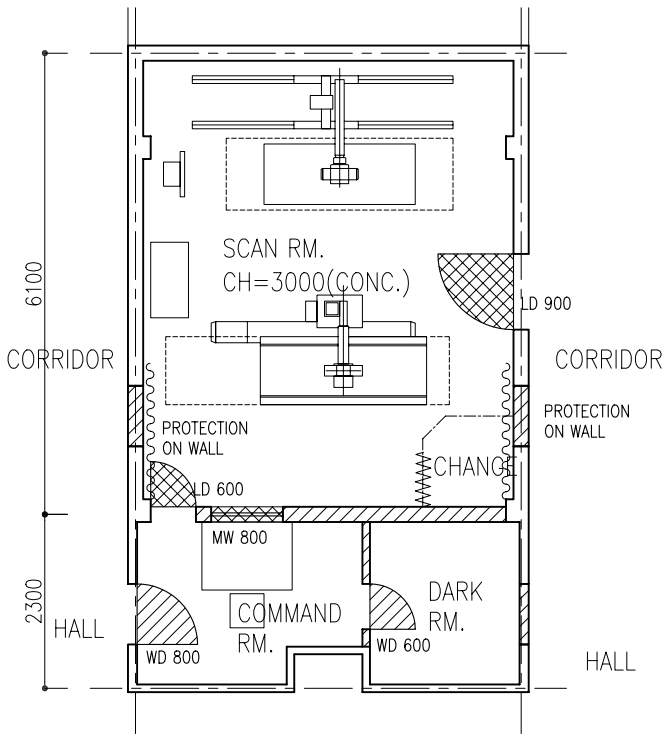
RS.7 SREBRENICA S=1/100	SCOPE OF WORK	B. CIVIL WORK	D. RADIATION PROTECTION
	* REMOVAL OF FURNITURE and CLEANING is applied in common.		
RENOVATION AREA: 55.4 sqm. LOCATION: GROUND FLOOR RENOVATION TYPE: - X RAY: GRAPHIE(NEW) + SCOPIE	A. PREPARATION WORK	C. FINISH WORK	
	- REMOVAL OF EXISTING X-RAY APPARATUS		E. MECHANICAL & ELECTRICAL WORK
			- OTHER NECESSARY M&E WORK
 TYPE 3			



EXISTING PLAN

TO BE REMOVED BY BiH

TO BE OPENED BY BiH



PROPOSED PLAN

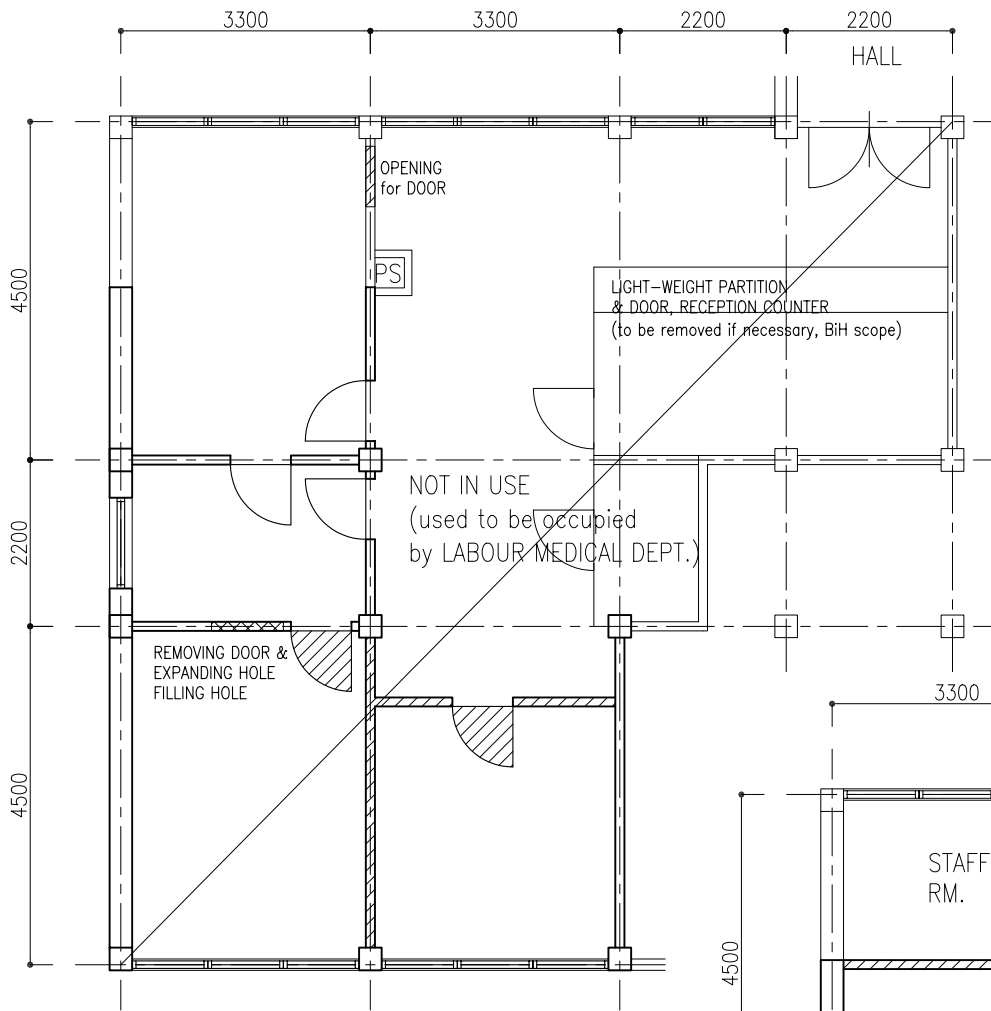
TO BE INSTALLED BY BiH

TO BE INSTALLED BY JPN

RS8. KNEZEVO
 [R] S=1/100
 RENOVATION AREA: 42.8 sqm.
 LOCATION: GROUND FLOOR
 RENOVATION TYPE: B
 X RAY: GRAPHIE(NEW)+SCOPIE(NEW)

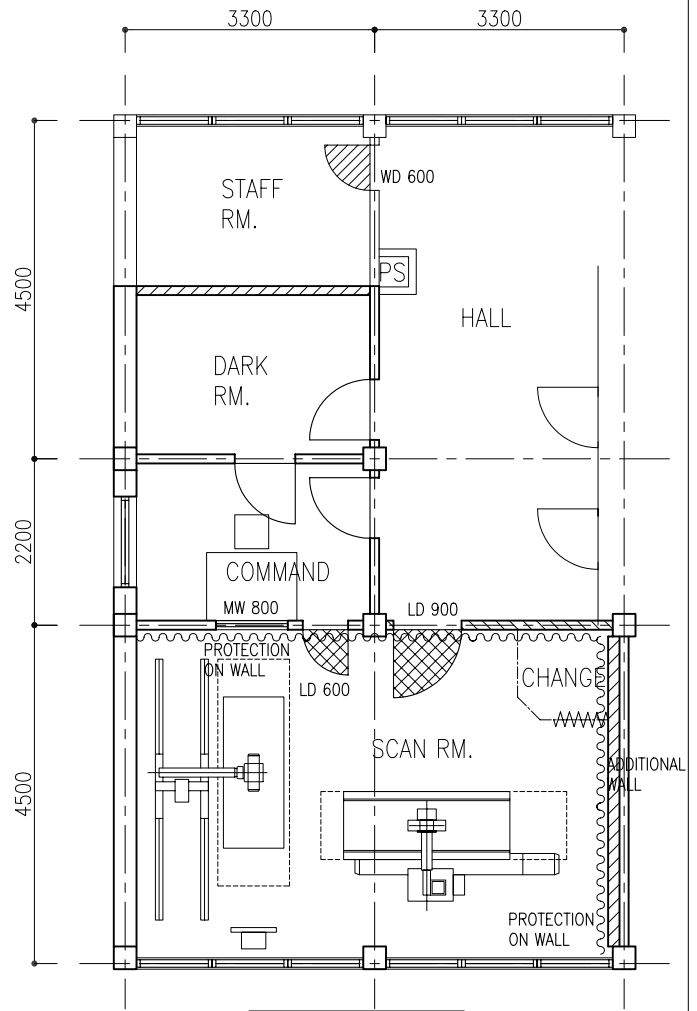
TYPE 3

SCOPE OF WORK	B. CIVIL WORK	D. RADIATION PROTECTION
* REMOVAL OF FURNITURE and CLEANING is applied in common.	- CONSTRUCTION OF PARTITION (see DWG.) - MAKING OF OPENING (see DWG.)	- PROTECTION on WALL (see DWG.) - LEAD DOOR w600 X1 (JPN) - LEAD DOOR w900 X1 (JPN)
A. PREPARATION WORK	C. FINISH WORK	
- REMOVAL OF EXISTING X-RAY APPARATUS	- MORTAR FINISH(+SOP) on NEW PARTITION	- MONITOR WINDOW w800 X1 (JPN)
- REMOVAL OF PARTITION (see DWG.)	- MORTAR FINISH(+SOP) on OPENING	E. MECHANICAL & ELECTRICAL WORK
- REMOVAL OF FLOOR/WALL FINISH	- TOUCH-UP on FLOOR/WALL/CEILING	- POWER SUPPLY for X RAY APPARATUS
- REMOVAL OF DOOR (see DWG.)	- SETTING OF WOOD/PLASTIC DOOR (see DWG.)	- INSTALLATION OF WASH BASIN (see DWG.)
- REMOVAL OF WASH BASIN		- OTHER NECESSARY M&E WORK



EXISTING PLAN

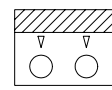
- TO BE REMOVED BY BIH
- TO BE OPENED BY BIH



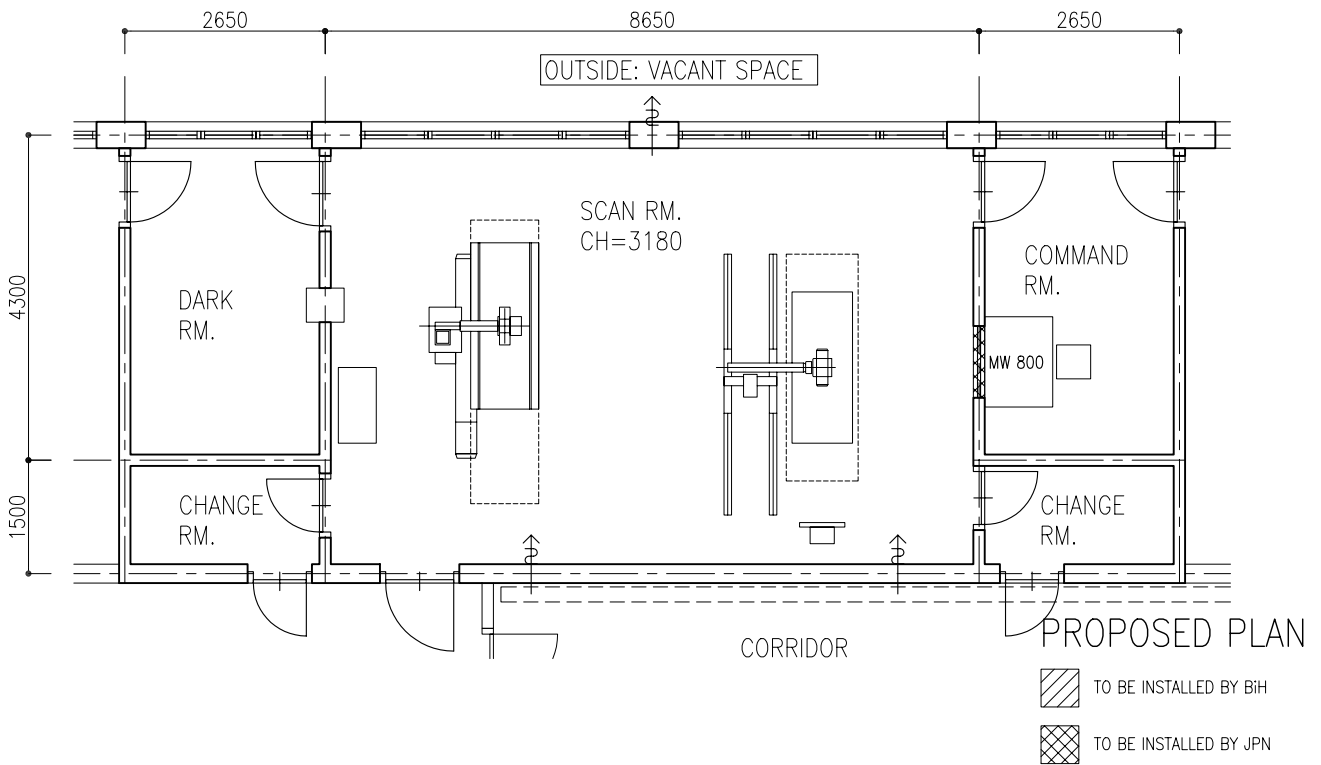
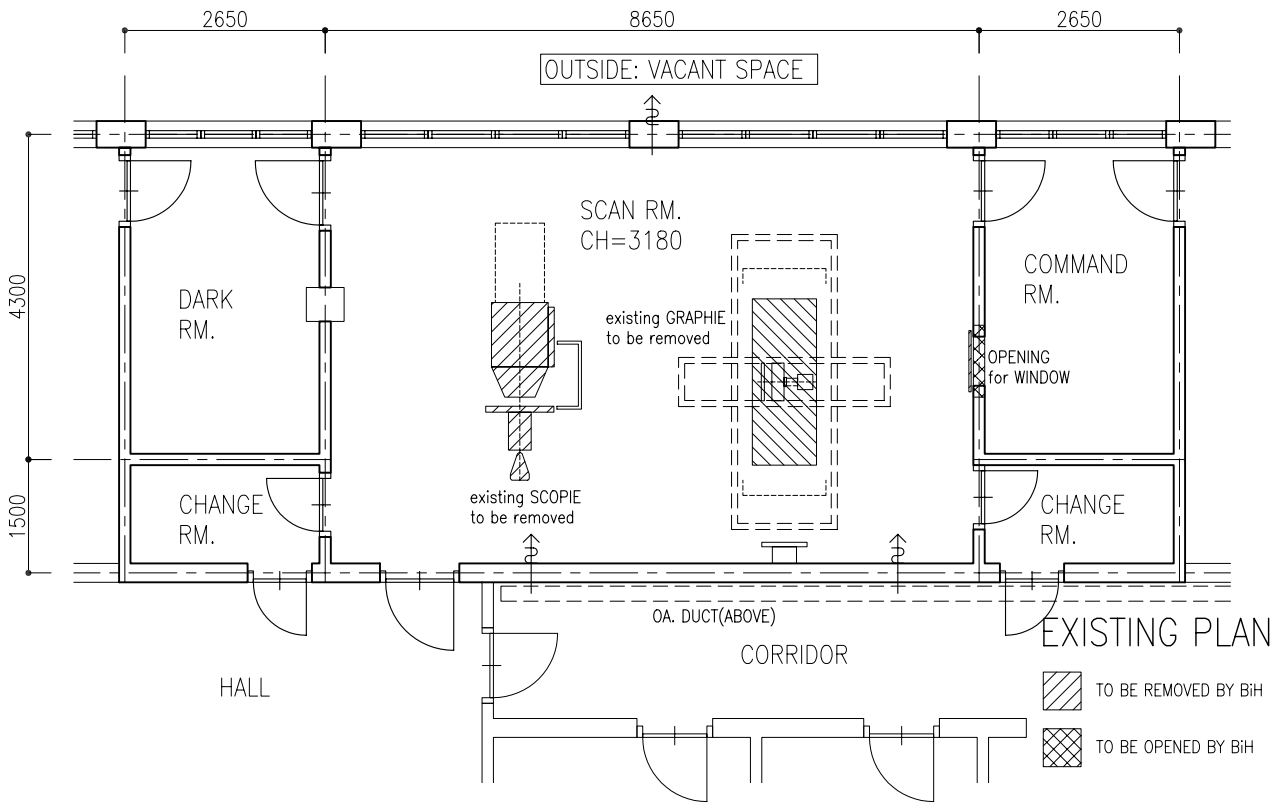
PROPOSED PLAN

- TO BE INSTALLED BY BIH
- TO BE INSTALLED BY JPN

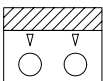
RS9. SRPSKI BROD S=1/100	SCOPE OF WORK * REMOVAL OF FURNITURE and CLEANING is applied in common.	B. CIVIL WORK - CONSTRUCTION OF PARTITION (see DWG.) - MAKING OF OPENING (see DWG.) - FILLING OF OPENING (see DWG.)	D. RADIATION PROTECTION - PROTECTION ON WALL (see DWG.) - LEAD DOOR w600 X1 (JPN) - LEAD DOOR w900 X1 (JPN)
	A. PREPARATION WORK - REMOVAL OF PARTITION (see DWG.) - REMOVAL OF FLOOR/WALL FINISH - REMOVAL OF DOOR (see DWG.)	C. FINISH WORK - MORTAR FINISH(+SOP) on NEW PARTITION - MORTAR FINISH(+SOP) on OPENING - TOUCH-UP on FLOOR/WALL/CEILING - SETTING OF WOOD/PLASTIC DOOR (see DWG.)	E. MECHANICAL & ELECTRICAL WORK - MONITOR WINDOW w800 X1 (JPN) - POWER SUPPLY for X RAY APPARATUS - OTHER NECESSARY M&E WORK



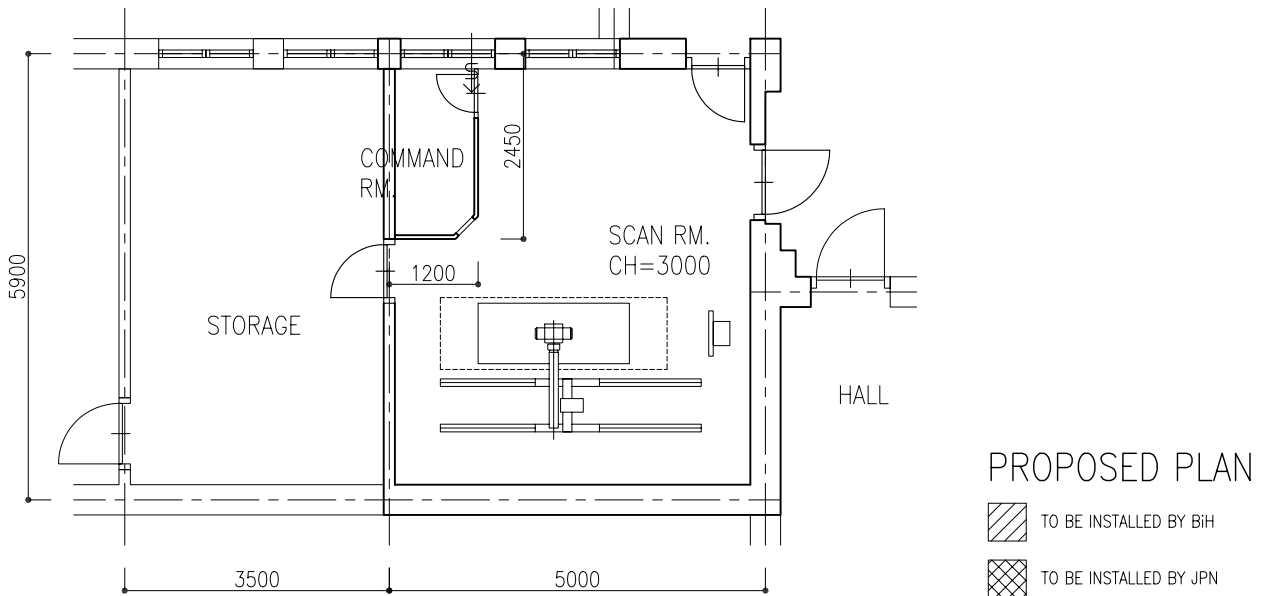
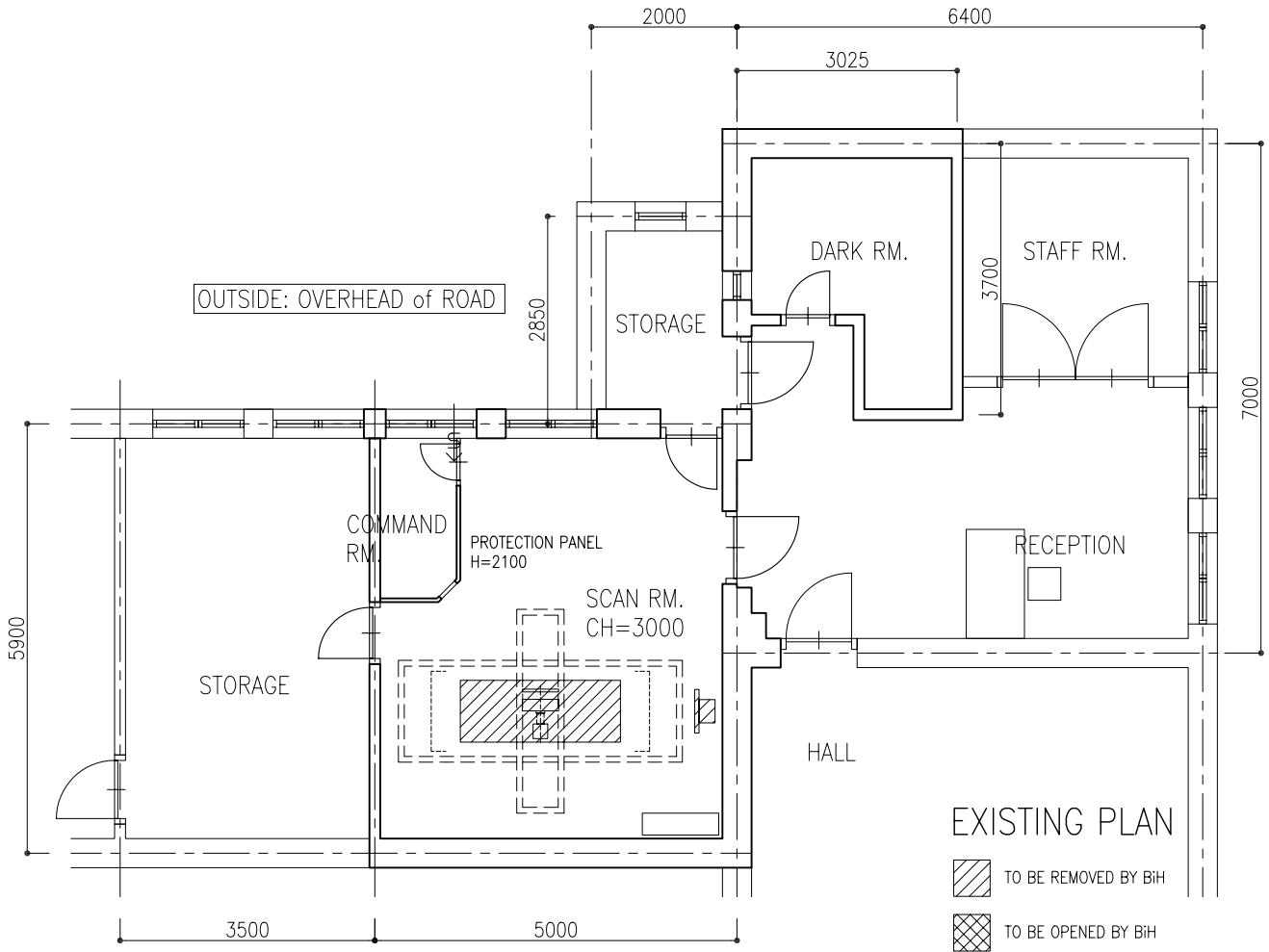
TYPE 3




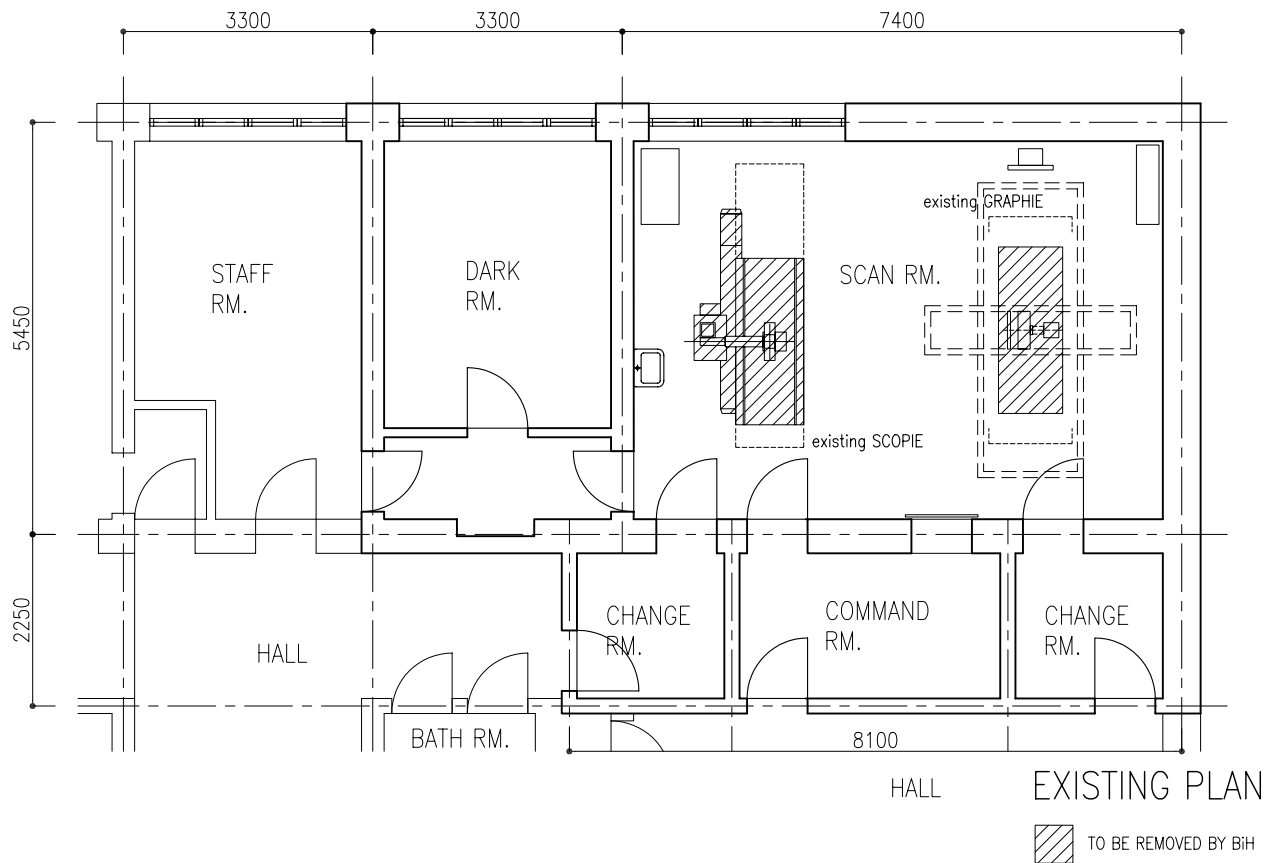
RS.10 SAMAC R S=1/100	SCOPE OF WORK * REMOVAL OF FURNITURE and CLEANING is applied in common.	B. CIVIL WORK - MAKING OF OPENING (see DWG.)	D. RADIATION PROTECTION
	A. PREPARATION WORK - REMOVAL OF EXISTING X-RAY APPARATUS	C. FINISH WORK - MORTAR FINISH(+SOP) on OPENING	E. MECHANICAL & ELECTRICAL WORK - MONITOR WINDOW w800 X1 (JPN) - OTHER NECESSARY M&E WORK
RENOVATION AREA: 80.9 sqm. LOCATION: GROUND FLOOR RENOVATION TYPE: C X RAY: GRAPHIE(NEW) + SCOPIE(NEW)			



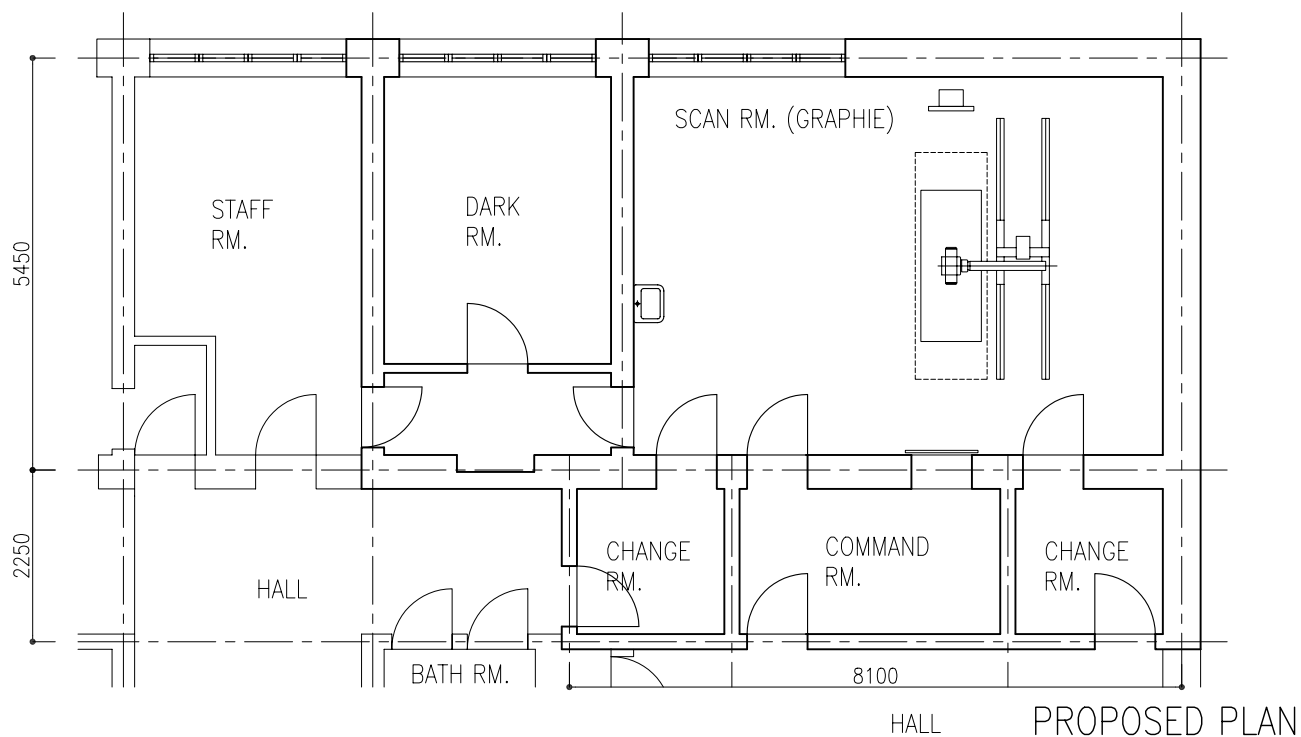
TYPE 3



RS.11 ROGATICA S=1/100	SCOPE OF WORK	B. CIVIL WORK	D. RADIATION PROTECTION
	* REMOVAL OF FURNITURE and CLEANING is applied in common.		
RENOVATION AREA: 40.6 sqm. LOCATION: GROUND FLOOR RENOVATION TYPE: - X RAY: GRAPHIE(NEW)	A. PREPARATION WORK	C. FINISH WORK	
	- REMOVAL OF EXISTING X-RAY APPARATUS		E. MECHANICAL & ELECTRICAL WORK
			- OTHER NECESSARY M&E WORK
 TYPE 5			



TO BE REMOVED BY BIH



RS12. VLASENICA
S=1/100

RENOVATION AREA: 76.5 sqm.
LOCATION: GROUND FLOOR
RENOVATION TYPE: -
X RAY: GRAPHIE(NEW)



TYPE 5

SCOPE OF WORK

* REMOVAL OF FURNITURE and CLEANING
is applied in common.

A. PREPARATION WORK

- REMOVAL OF EXISTING X-RAY APPARATUS

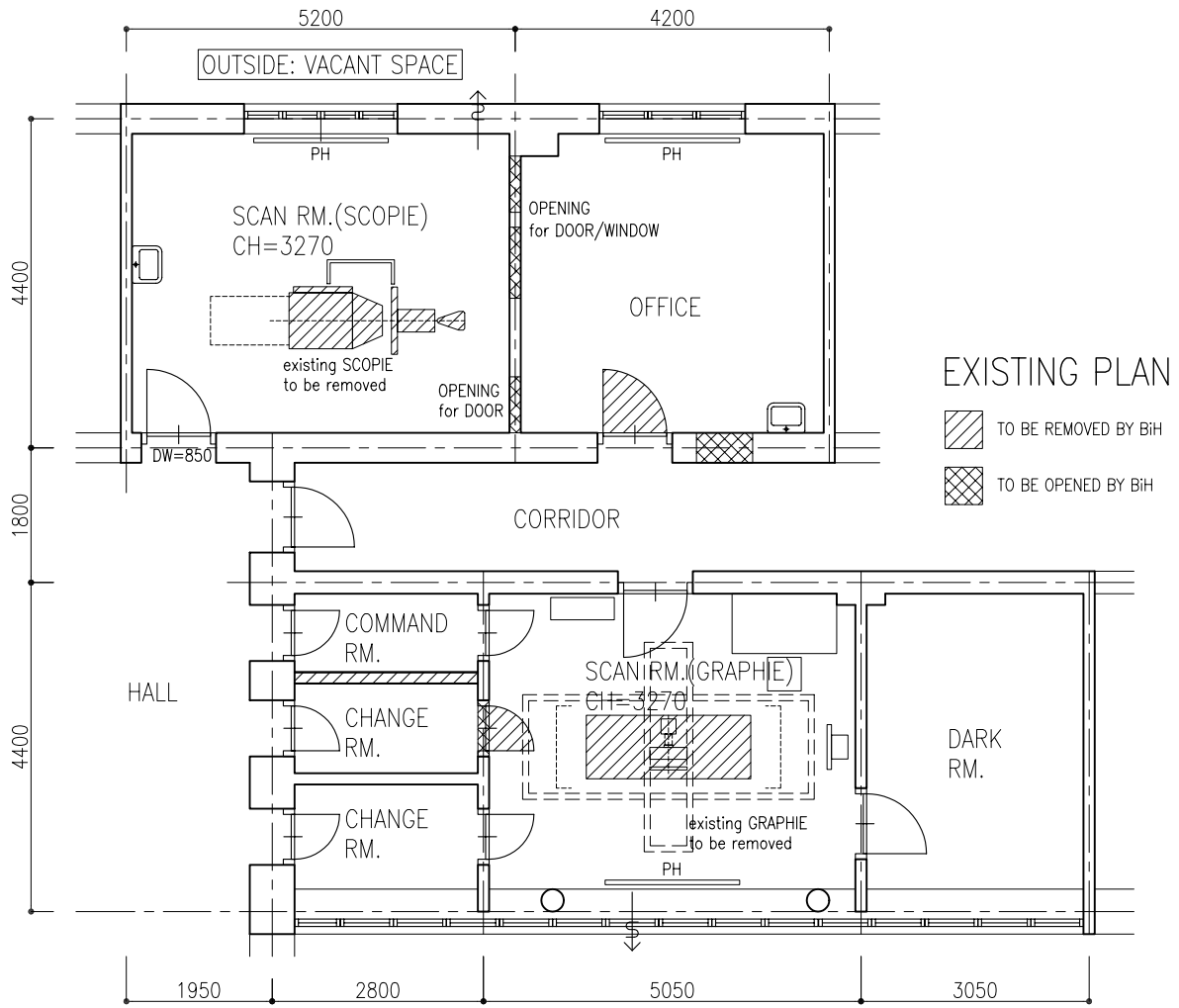
B. CIVIL WORK

C. FINISH WORK

D. RADIATION PROTECTION

E. MECHANICAL & ELECTRICAL WORK

- OTHER NECESSARY M&E WORK



BR.1 BRCKO

R

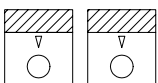
S=1/100

RENOVATION AREA: 89.3 sqm.

LOCATION: GROUND FLOOR

RENOVATION TYPE: B

X RAY: GRAPHIE(NEW) + SCOPIE(NEW)



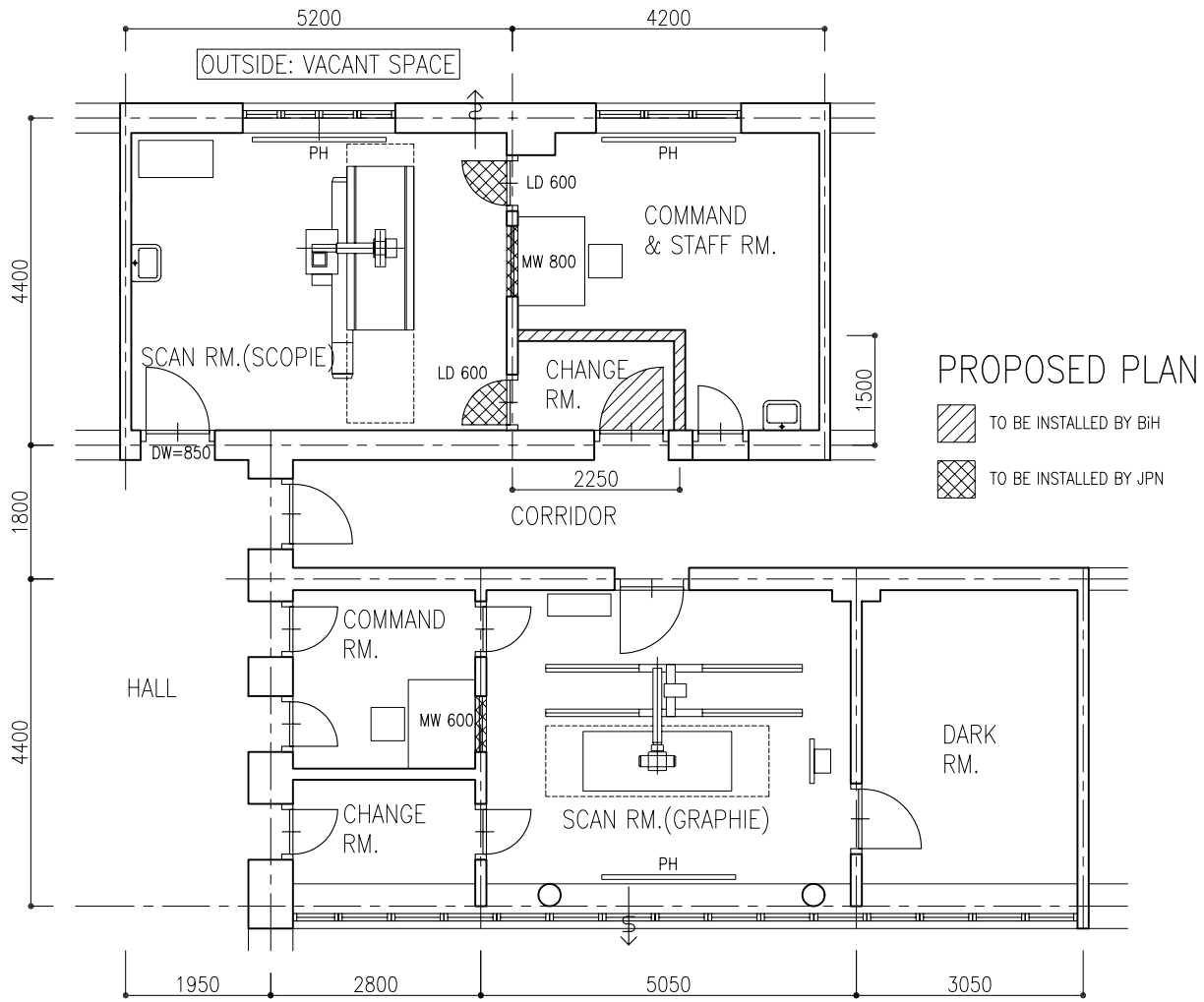
TYPE 1

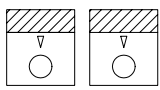
SCOPE OF WORK

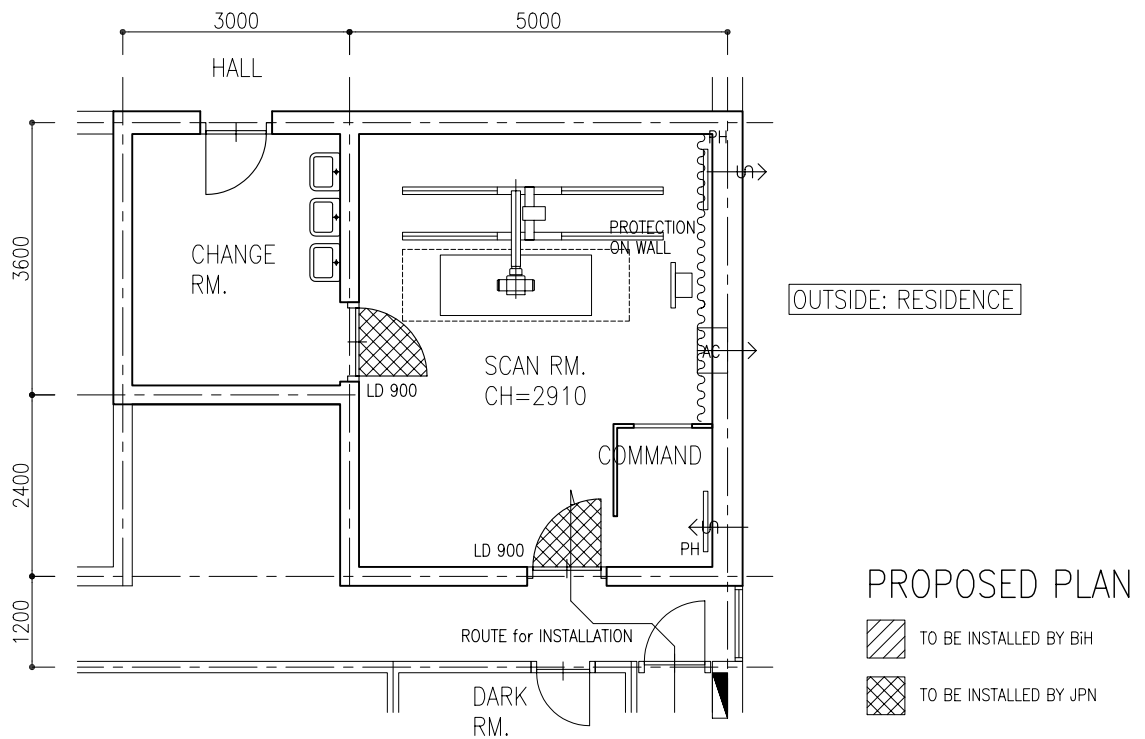
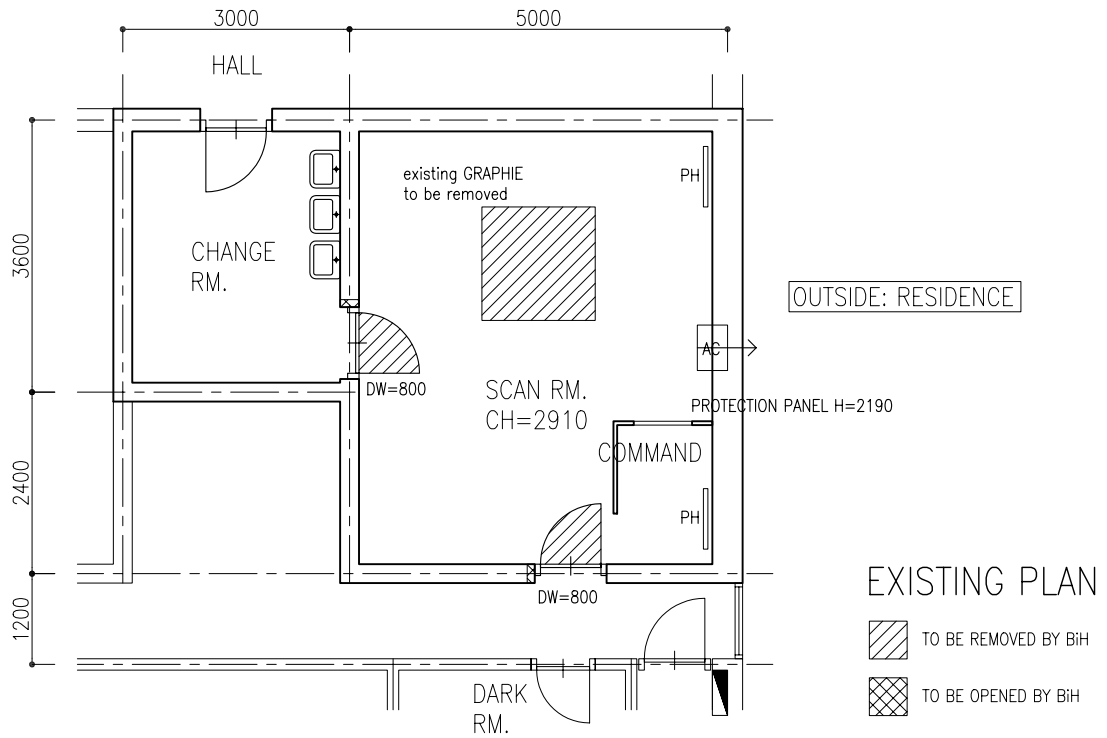
* REMOVAL OF FURNITURE and CLEANING
is applied in common.

A. PREPARATION WORK

- REMOVAL OF EXISTING X-RAY APPARATUS
- REMOVAL OF PARTITION (see DWG.)
- REMOVAL OF FLOOR/WALL FINISH
- REMOVAL OF DOOR (see DWG.)

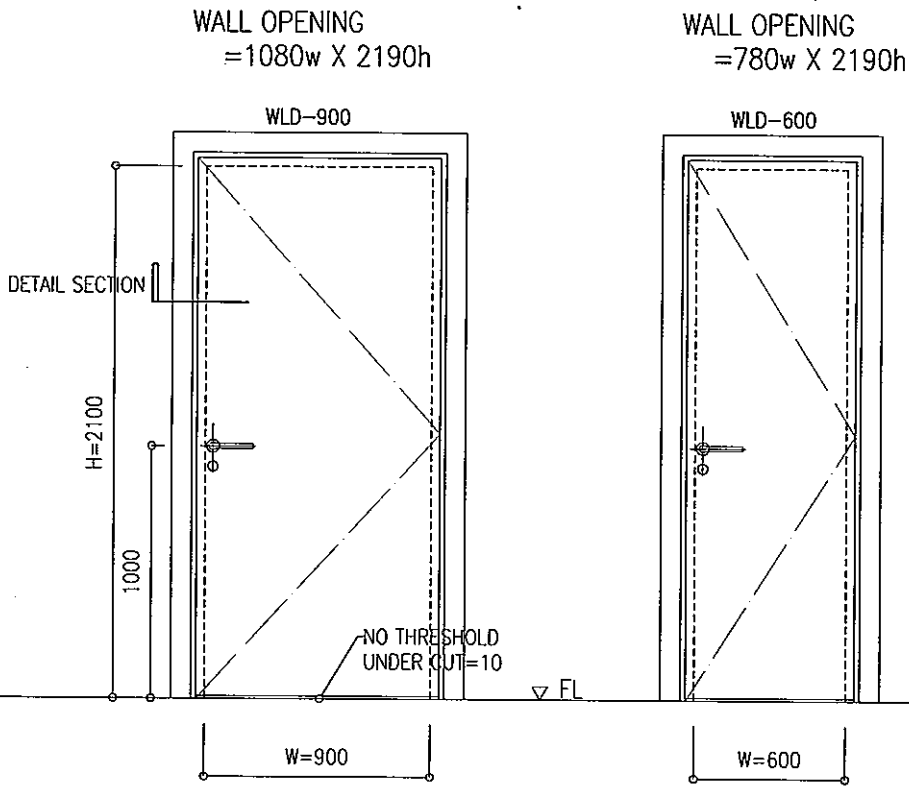


BR.1 BRCKO R S=1/100	B. CIVIL WORK - CONSTRUCTION OF PARTITION (see DWG.) - MAKING OF OPENING (see DWG.) - FILLING OF OPENING (see DWG.)	D. RADIATION PROTECTION - PROTECTION on WALL (see DWG.) - LEAD DOOR w600 X2 (JPN)
	C. FINISH WORK - MORTAR FINISH(+SOP) on NEW PARTITION - MORTAR FINISH(+SOP) on OPENING - TOUCH-UP on FLOOR/WALL/CEILING - SETTING OF WOOD/PLASTIC DOOR (see DWG.)	E. MECHANICAL & ELECTRICAL WORK - MONITOR WINDOW w600 X1 (JPN) - MONITOR WINDOW w800 X1 (JPN) - POWER SUPPLY for X RAY APPARATUS - OTHER NECESSARY M&E WORK
RENOVATION AREA: 89.3 sqm. LOCATION: GROUND FLOOR RENOVATION TYPE: B X RAY: GRAPHIE(NEW) + SCOPIE(NEW)		
 TYPE 1		



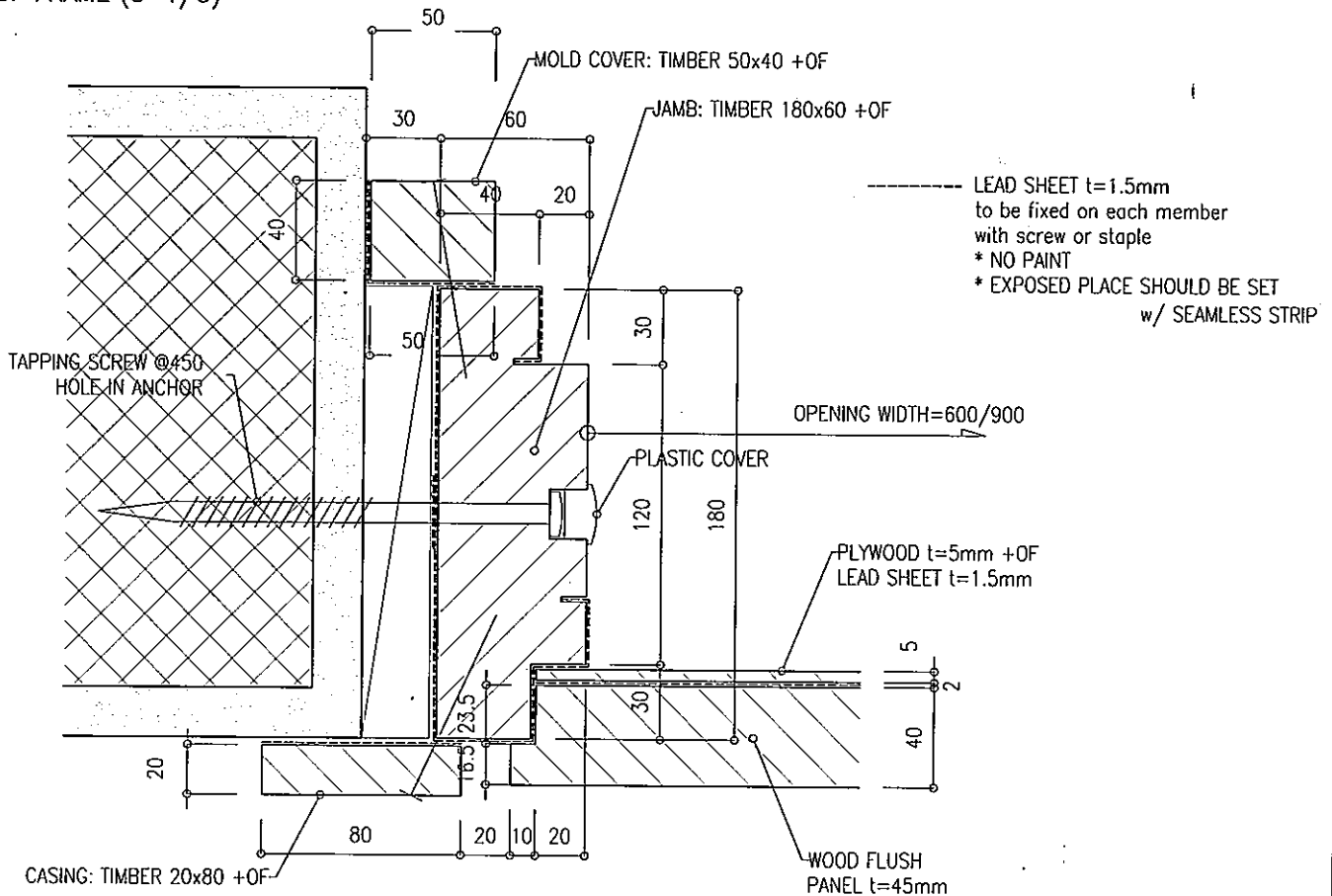
BR.2 MAOCA [R] S=1/100	SCOPE OF WORK	B. CIVIL WORK	D. RADIATION PROTECTION
	* REMOVAL OF FURNITURE and CLEANING is applied in common.		- PROTECTION on WALL (see DWG.)
RENOVATION AREA: 40.8 sqm. LOCATION: GROUND FLOOR RENOVATION TYPE: - X RAY: GRAPHIE(NEW)	A. PREPARATION WORK	C. FINISH WORK	- LEAD DOOR w900 X2 (JPN)
	- REMOVAL OF EXISTING X-RAY APPARATUS		E. MECHANICAL & ELECTRICAL WORK
	- REMOVAL OF PARTITION (see DWG.)		
	- REMOVAL OF FLOOR/WALL FINISH		
	- REMOVAL OF DOOR (see DWG.)		
 TYPE 5			- OTHER NECESSARY M&E WORK

ELEVATION OF DOOR (S=1/30)



SPECIFICATION	
Type	Wood Swing Door
Panel	Wood Flush Panel +OF(Oil Finish)
Frame	Timber +OF
Hardware	Mortise Lock w/ Cylindrical Dead Lock
	Lever Handle
	Butt Hinge
	Door Closer
	Door Stop
Remark	CONCEALED Lead Sheet (1.5 mmPb) to be set on door and frame.

DETAIL OF FRAME (S=1/3)



MATSUDA CONSULTANTS INTERNATIONAL CO., LTD.

43-3, Yoyogi 3-chome, Shibuya-ku, Tokyo, Japan
tel 03(5334)5681 fax 03(5334)0777

PROJECT TITLE :

THE PROJECT FOR IMPROVEMENT OF MEDICAL EQUIPMENT AND FACILITIES IN PRIMARY HEALTH CARE INSTITUTIONS PHASE III IN BOSNIA AND HERZEGOVINA

DRAWING DATE :

23/04/2004

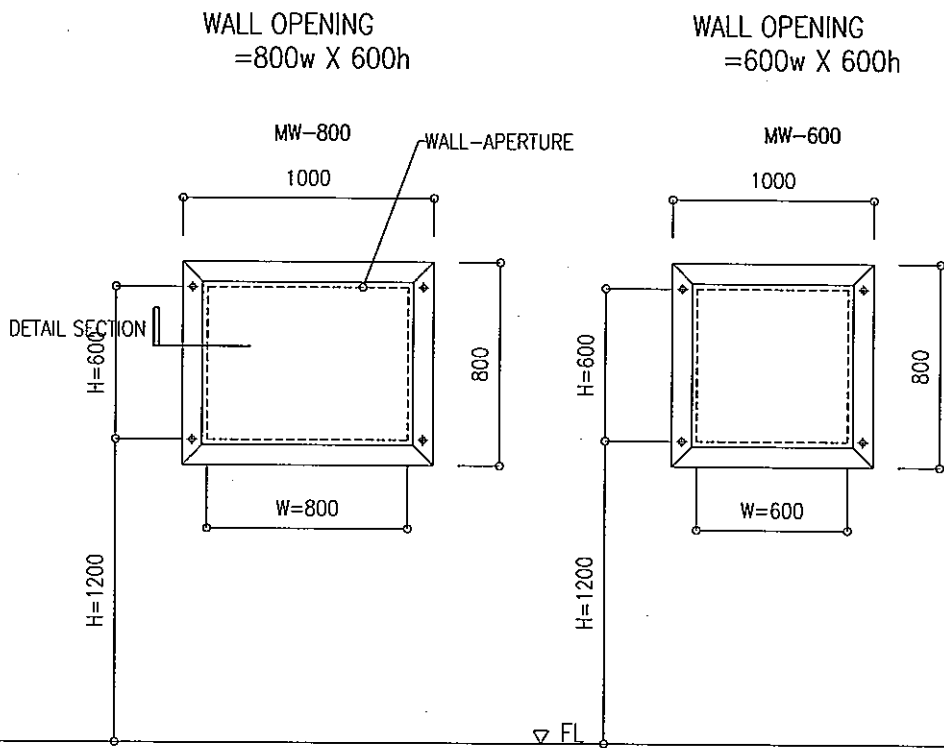
SCALE :

S=1/3, 1/30

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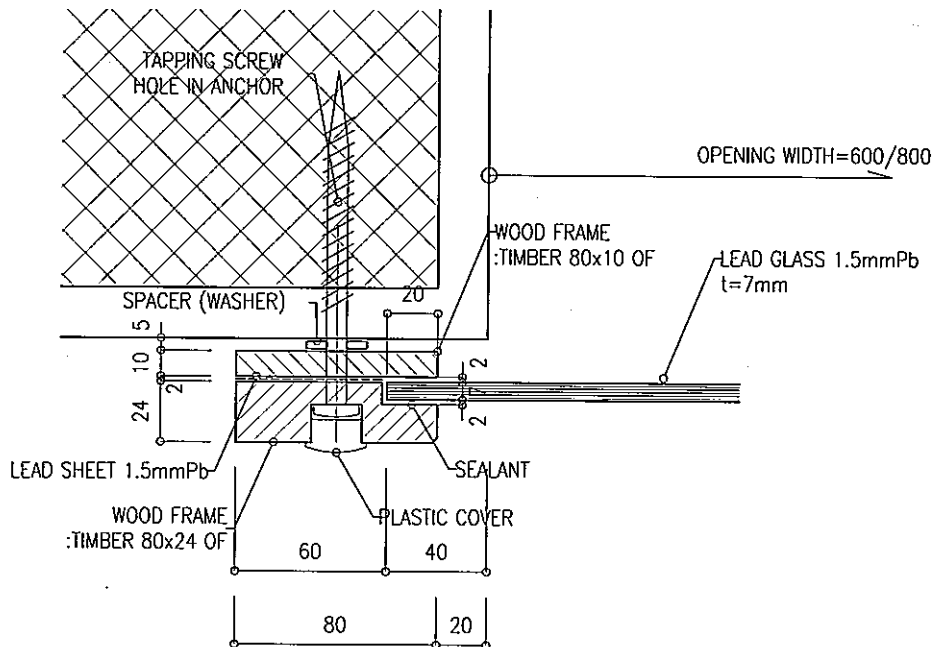
WOOD LEAD DOOR and DETAIL OF FRAME

ELEVATION OF WINDOW (S=1/30)



SPECIFICATION	
Type	Fixed Glass Window
Glazing	Lead Glass (1.5mmPb) 680hx880w for MW-800 680hx680w for MW-600
Frame	Timber +OF(Oil Finish)
Hardware	Fastening Bolt

DETAIL OF FRAME (S=1/3)



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PROJECT TITLE :

THE PROJECT FOR IMPROVEMENT OF
MEDICAL EQUIPMENT AND FACILITIES
IN PRIMARY HEALTH CARE INSTITUTIONS
PHASE III
IN BOSNIA AND HERZEGOVINA

DRAWING DATE :

26/04/2004

SCALE :

S=1/3, 1/30

DRAWING TITLE :

MONITOR WINDOW
and DETAIL OF FRAME

2.2.4 Implementation Plan

2.2.4.1 Implementation Policy

(1) Basic Procedures of Project Implementation

Before implementing this Project, its contents need to be examined based on this report by the relevant Japanese government agencies and approved by the Japanese Cabinet. Upon approval by the Japanese Cabinet, the governments of Japan and Bosnia and Herzegovina will sign the Exchange of Notes (E/N) to officially commence the implementation of the Project, which consists of the supervision of the public tender and construction processes by the Japanese consultant firm and the procurement and installation work by Japanese equipment suppliers. The consultant firm and the equipment suppliers will individually conclude the consultant agreement and the equipment procurement/installation work agreement with each of the three implementing agencies of Bosnia and Herzegovina, all of which must be approved by the Japanese government.

(2) Project implementation System

The Ministry of Foreign Affairs of Bosnia and Herzegovina will serve as a liaison office to coordinate and supervise various affairs concerning this Project, including the signing of the Exchange of Notes (E/N) between the two countries. The three implementing agencies, namely the Department for Medical Affairs and Organization of Health System, the Ministry of Health, Federation of Bosnia and Herzegovina (FBiH); the Department of Health Reform and Reconstruction, the Ministry of Health and Social Welfare, Republika Srpska (RS); and the Department of Health, Public Safety and Community Services, District of Brcko (BR), will each be coordinating and operating its portion of this Project within its territory. These three agencies will be the parties to the equipment supply / installation supervision contracts with the Japanese consultant.

(3) Japanese Consultant

After the signing of the E/N between the governments of both countries, the three implementing agencies of Bosnia and Herzegovina will conclude the Equipment Procurement / Installation Supervision Agreement with the Japanese consultant. Upon

approval of the agreement by the Japanese government, the consultant, in accordance with the agreement, will invite tenders to select equipment suppliers and supervise the procurement and installation of the equipment.

(4) Equipment Supplier

The procurement work for this Project consists of procurement and installation of equipment. Although this includes the installation of X-ray protective doors and windows in connection with facility renovation, such installation work will be relatively simple and can be handled under the same conditions as those of other equipment items without forming a consortium with construction companies. Equipment supplier(s) will be selected from Japanese equipment procurement companies by public tender. Separate tenders will be held for each implementing agency, with which the successful bidder will conclude the equipment procurement / installation agreement. Upon approval of the agreement by the Japanese government, each supplier will complete the procurement and installation works within a promised period, give necessary technical training with regard to the operation and maintenance of each equipment item, and prepare instruction manuals and other technical documents, including the list of manufacturers and their local agents, that are necessary for the maintenance of the equipment. After the final inspection, the installed equipment will be handed over to each implementing agency.

2.2.4.2 Things to Note in Procuring Equipment

(1) Traffic Conditions During Winter

As the equipment to be procured by this Project will be transported by land and installed in the target sites during winter, snow and freezing temperatures may hinder the delivery of equipment, as well as the movement and work of the laborers and technicians. In order to complete the process within the period promised in the E/N, the implementation schedule should be carefully worked out to avoid these potential hindrances as much as possible.

(2) Coordinating the Work Schedules of Both Countries

In this Project, the Bosnian implementing agencies will need to finish preparatory work at many sites (removal of existing X-ray equipment at 29 sites and renovation of

existing facilities at 22 sites) before the Japanese suppliers begin installing the equipment. Thus, the work schedules of both sides should be carefully coordinated through ample discussions and by making necessary adjustments.

2.2.4.3 Division of Procurement / Installation Work

If this Project is to be implemented under the framework of Grant Aid of the Japanese government, the governments of Japan and Bosnia and Herzegovina will each be undertaking the following tasks at its own account as outlined below:

(1) Government of Japan

1. Procurement of selected equipment
2. Transportation of the equipment via ocean and land to each DZ.
3. Installation of the equipment.
4. Trial operation of the equipment, and provision of technical training with regard to the operation, inspection, and maintenance of the equipment.

(2) Three Implementing Agencies (FBiH, RS, and BR) of Bosnia and Herzegovina

1. Provision of data, documents, and other information necessary for the transportation and installation of the equipment.
2. Removal of existing equipment to be replaced and the renovation and upgrading of existing facilities necessary for the installation of the equipment to be procured by this Project.
3. Installation of utility facilities (service water, sewage, electrical outlet, primary power source) necessary for the installation of the equipment.
4. Securing of spaces to store unloaded equipment.
5. Provision of spaces to store the equipment before installation work.
6. Securing of passages to carry in the equipment to the installation areas.

Expenses to be born by Bosnia and Herzegovina are shown in Appendices.

2.2.4.4 Consultant Supervision

The consultant, after inviting tenders to select equipment suppliers for this Project, will supervise the procurement and installation work to ensure smooth progress.

The consultant will check each equipment item procured by the supplier and its conformity to the specification provided as part of the procurement agreement and conduct pre-shipment inspection if necessary. Also, in supervising the ocean / inland transportation of the equipment, the consultant should pay special attention to how many days it will take to complete transportation and customs clearance procedures and give proper guidance to the equipment supplier when necessary. As for the installation work at each site, the consultant should constantly monitor the work, give appropriate advice to the Bosnian implementing agencies and Japanese equipment suppliers, and report the progress to the relevant government agencies of both countries. The consultant should pay particularly close attention to the progress and coordination of the preparatory work to be done at the target DZ by the Bosnian implementing agencies so that the installation work by the Japanese suppliers will be finished without delay.

During the construction period, the suppliers will give basic technical training to the Bosnian personnel to be operating and maintaining the equipment that require such training. The Japanese consultant will contact and have discussions with the Bosnian implementing agencies and the Japanese equipment suppliers to ensure that such training will be given effectively and efficiently.

To carry out the supervisory work, the consultant firm will form a team of six members consisting of a project chief of renovation work, three engineers in charge of equipment planning, and two engineers in charge of cost estimation and procurement. During the process of ordering and transporting the equipment, the team will dispatch personnel to supervise critical spots. The processes of equipment installation and handover will be constantly monitored by two engineers at the site, as well as other engineers dispatched from Japan to supervise important points of the work.

2.2.4.5 Quality Control Plan

This Project will procure medical equipment products that are ready-made and select them from manufacturers that are experienced in supplying such equipment to medical institutions in many countries. To ensure quality of the equipment, Japanese products shall be selected from those that conform to JIS, and European and American products shall be chosen from those meeting the BS or DIN standards. Equipment items that require reagents or other expendable materials will be selected from universal-type models for which such materials are easily obtainable within Bosnia and Herzegovina.

2.2.4.6 Procurement Plan

(1) Local Procurement

Considering the high transportation cost of ambulance vehicles and the presence of relatively well-developed local dealers, it is desirable that ambulance vehicles be procured from the local dealerships of Japanese or third-country manufacturers. Also, X-ray protective doors, doorframes, and window frames for control rooms, with the exception of leaded glass, may be selected from locally made products.

(2) Possibility of Procuring Third-Country Product

Based on the analysis of the medical equipment market trend and the technical capabilities of the equipment manufacturers of Bosnia and Herzegovina, it is desirable that this Project would procure the 12 equipment items listed below from Japan or third countries:

X-ray equipment, film developing machine, ultrasonic diagnostic equipment, spirometer, ECG, biochemical analyzer, spectrophotometer, blood cell counter, balance, defibrillator, leaded glass and frame, and lead-lined door and doorframe

In procuring third-country product, each implementing agency needs to submit an application form for third-country product procurement to the Japanese government to obtain its approval prior to public tender.

(3) Transportation Period

Japanese products will be packaged separately for each target site, laded, unladed at Koper Port, and delivered to the site. Third-country products will be handed over to the Bosnian side at Korpa and transported via land to the target sites. It is estimated to take about five weeks to ship Japanese products by ocean freight, and another three weeks or so to undergo customs clearance procedures and transporting the goods by land to each site.

2.2.4.7 Implementation Process

(1) Tendering Process

Each installment period will take four and half months, after the approval of the consultant agreement by the Japanese government, for the consultant to prepare and distribute tender documents and, upon approval thereof by the three implementing agencies, announce and hold public tender, evaluate tenders, and select the equipment supplier(s) who will conclude the equipment procurement agreement.

(2) Equipment Procurement and Installation Work

Upon approval of the equipment procurement agreement, the equipment suppliers will order/manufacture the equipment, which will then be transported via ocean, unladed for customs clearance, delivered by land to the sites, and installed there. After trial operation and provision of operational instructions, the equipment will be handed over to the recipient side. The entire process from the equipment procurement agreement to the handover will take about nine months for the first installation period and about eight months for the second period.

Table 2-18: Project Implementation Schedule

1st phase		0	1	2	3	4	5	6	7	8	9
Tender stage	confirmation and planning	■									(4.5 months)
	preparation of tender document		■								
	confirmation of tender document			■							
	tender notice				△						
	tender and contract						▲				
Procurement & installation stage	manufacturing										(9.0 months)
	transportation							■			
	installation and final inspection									■	
	explanation of operation and handing over									■	●
2nd phase		0	1	2	3	4	5	6	7	8	9
Tender stage	confirmation and planning	■									(4.5 months)
	preparation of tender document		■								
	confirmation of tender document			■							
	tender notice				△						
	tender and contract						▲				
Procurement & installation stage	manufacturing										(8.0 months)
	transportation							■			
	installation and final inspection									■	
	explanation of operation and handing over									■	●

2.3 Obligations of the Recipient Country

(1) Scope of Obligations

The obligations of Bosnia and Herzegovina with regard to the implementation of this Project are as follows:

1. Securing of sufficient passages and spaces needed for carrying in and storing the procured equipment.
2. Renovation and upgrading of facilities and equipment needed for the effective utilization of the procured equipment.
3. Arrangements for smooth customs clearance and domestic transportation of the procured equipment within Bosnia and Herzegovina.
4. The issuance of permits, licenses, and other authorizations needed for the implementation of this Project (including the permit for the use of X-ray room), as well as the payment of fees involved in the issuance of such authorizations.
5. Exception from customs duties and taxation for the equipment suppliers and their associates.
6. Accordance of the necessary facilities and assurance of safety for Japanese nationals performing necessary services in connection with the implementation of this Project.
7. Payment of expenses for the formalities of Banking Arrangements (B/A) and Authorization to Pay (A/P).
8. Deployment of the personnel and budget needed for the effective implementation of this Project (including O/M cost of procured equipment).
9. Disclosure of the data, documents, and other information needed for the implementation of this Project, other than those listed above.

(2) Renovation Work on Radiology Department to be Undertaken by the Recipient Side

Contents of the construction work on the radiology department of each site to be undertaken by the recipient side are outlined in Table 2-19 below. The Bosnian side is responsible for completing the works listed below before the installation of the X-ray equipment to be procured by the Japanese side. As a result of discussions during the site survey, the personnel of each DZ generally agreed to take on these works. Also, our analysis of the survey findings confirmed the appropriateness of the scale, contents, and technical level of the renovation work.

- ① Removal of existing furniture, equipment, and waste materials: to be done at all sites in which X-ray equipment will be installed under this Project.
- ② Removal of existing X-ray equipment: the number of radiology units to be removed varies from site to site.
- ③ Providing openings on existing / newly-installed walls for installing protective doors and windows.
- ④ Removal of existing walls (mostly brick walls), doors, and windows due to floor plan change.
- ⑤ Installation of new walls (brick walls + mortar paint) due to floor plan change.
- ⑥ Installation of regular doors not needing X-ray protection.
- ⑦ Rewiring and re-plumbing needed for floor plan change.
- ⑧ Installation of ventilation and lighting systems due to floor plan change.
- ⑨ Securing of power source needed for newly-procured or relocated X-ray equipment.
- ⑩ X-ray shielding on the existing walls and windows, as the necessity arises.

Table 2-19: Construction Works by BiH on Radiology Department of each Site

Code No.	Site Name	Planning		Scale of renovation				Recipient Country's Works										
		Type of apparatus		Location of installation	Floor area of X-ray rooms(m ²)		Floor area of target space (*1)	Category of renovation	① Removal of furniture, equipment fittings, and clearing space	② Removal of existing X-ray apparatus	③ Providing openings on the walls for installing doors/windows	④ Removal of existing walls, doors, windows	⑤ Construction of new partitions	⑥ Installation of general doors(not X-ray proof)	⑦ Replacement of electrical cables/tubes and utility lines	⑧ Installation of ventilation fan and lighting fixtures	⑨ Power Supply (Include replace existing power)	⑩ X-ray proof works on exist. Walls/windows etc.
		Graphie	Scope		Graphie	Scope												
□Federation of Bosnia and Herzegovina																		
FD1	Bosanska Krupa	○	○	Ext.P	24.0	21.9	71.8	C	◎	◎	◎	-	-	-	-	-	-	
FD2	Velika Kladusa	-	○	Extent.	-	«27»	«206»	A	◎	-	◎	◎	-	-	◎	◎	◎	
FD3	Sanski Most	○	○	Ext.P	33.9	-	95.5	B	◎	◎	◎	◎	-	-	◎	-	-	
FD4	Kladanj	○	○	New.P	36.9	-	64.2	B	◎	◎	◎	◎	◎	◎	-	◎	-	
FD5	Banovici	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
FD6	Zenica	○	○	Ext.P	37.6	-	56.4	C	◎	◎	◎	◎	-	-	-	-	◎	
FD7	Fojnica	○	-	Ext.P	19.1	-	45.9	-	◎	◎	-	-	-	-	-	-	-	
FD8	Visoko	-	○	Ext.P	-	24.3	52.6	-	◎	◎	-	-	-	-	-	-	-	
FD9	Gorazde	○	-	New.P	21.7	-	38.8	A	◎	-	◎	◎	◎	◎	◎	◎	◎	
FD10	Vitez	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
FD11	Donji Vakuf	○	○	Ext.P	20.1	21.1	70.7	C	◎	◎	◎	-	-	◎	-	-	-	
FD12	Kiseljak	○	○	Ext.P	33.6	-	59.0	C	◎	-	◎	-	-	-	-	-	-	
FD13	Jablanica	○	-	Ext.P	32.9	-	68.3	-	◎	◎	-	◎	◎	-	-	-	-	
FD14	Citluk	○	○	Ext.P	47.2	-	96.3	B	◎	◎	◎	◎	-	◎	◎	-	◎	
FD15	Stolac	○	-	Ext.P	22.7	22.7	61.4	-	◎	◎	-	-	-	-	-	-	-	
FD16	Prozor/ Rama	○	○	Ext.P	26.7	-	36.9	B	◎	◎	-	◎	◎	-	◎	-	◎	
FD17	Tomislavgrad	○	○	Ext.P	25.7	29.9	90.6	C	◎	◎	◎	-	-	-	-	-	◎	
FD18	Mojmilo/ Saraj Polje	○	-	Ext.P	32.7	-	50.4	-	◎	◎	-	-	-	-	-	-	-	
SUB. TOTAL		14	11	-	-	-	958.8	-	16	13	10	8	5	4	6	2	7	2
□Republic of Srpska																		
RS1	Banja Luka	○	○	New P	29.6	29.6	95.6	A	◎	-	◎	◎	◎	◎	◎	◎	◎	◎
RS2	Srbac	○	○	Ext.P	35.9	-	64.9	C	◎	◎	◎	-	-	-	-	-	◎	-
RS3	Prijedor	○	○	Ext.P	23.4	23.4	79.2	B	◎	◎	◎	◎	◎	◎	◎	-	-	-
RS4	Bijeljina	-	○	Ext.P	43.6	-	74.9	B	◎	◎	◎	◎	-	-	◎	-	-	-
RS5	Zvornik	○	○	New P	20.3	23.1	73.2	A	◎	-	◎	◎	◎	◎	◎	◎	◎	◎
RS6	Prnjavor	○	○	New P	33.7	-	59.0	A	◎	-	◎	◎	-	-	◎	◎	◎	◎
RS7	Srebrenica	○	-	Ext.P	38.5	-	55.4	-	◎	◎	-	-	-	-	-	-	-	
RS8	Skender V./ Knezevo	○	○	Entent.	31.1	-	42.8	B	◎	◎	-	◎	◎	◎	◎	-	◎	◎
RS9	Bosanski/ Srpski Brod	○	○	New P	29.7	-	44.4	A	◎	-	◎	◎	◎	◎	◎	◎	◎	◎
RS10	B.Samac/ Samac	○	○	Ext.P	50.2	-	80.9	C	◎	◎	◎	-	-	-	-	-	-	
RS11	Rogatica	○	-	Ext.P	26.5	-	40.6	-	◎	◎	-	-	-	-	-	-	-	
RS12	Vlasenica	○	-	Ext.P	40.3	-	94.5	-	◎	◎	-	-	-	-	-	-	-	
SUB. TOTAL		11	9	-	-	-	805.4	-	12	8	8	7	5	5	7	4	6	5
□Brcko																		
BR1	Brcko	○	○	Ext.P	22.2	22.9	89.3	B	◎	◎	◎	◎	◎	◎	◎	-	◎	-
BR2	Maoca	○	-	Ext.P	30.0	-	40.8	C	◎	◎	-	◎	-	-	-	-	-	◎
BR3	Bijela	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
SUB. TOTAL		2	1	-	-	-	130.1	-	2	2	1	2	1	1	1	0	1	1
TOTAL		27	21	-	-	-	1,894.3	-	30	23	19	17	11	10	14	6	14	8

(*1) Total area of X-ray rooms + Command rooms + Changing rooms + Dark rooms

(*2) A: New plan with replacement of radiology, B: Renovate existing X-ray room, C: No variation but install windows/doors

◎ denotes the required work to be conducted by Bosnia and Herzegovina side (Identified at the target site during the basic design study survey in February 2004)

FD2 New radiology building shall be constructed by FBiH side. (BF 70m² + 1F 206m² = 276m²)

2.4 Project Operation Plan

(1) Operation and Maintenance System

Table 2-20 below shows the personnel deployment in FY 2003 at each DZ. Implementation of this Project will not significantly affect the current deployment, because most of the equipment items to be procured under this Project will be replacing the existing equipment of the radiology, laboratory, and emergency departments of the target DZ, and the their staff members are already versed in the basic operation and maintenance of these items. Therefore, it is deemed that the DZ's present system will be sufficient to properly operate and maintain the procured equipment.

Table 2-20: Deployment of Staff at each DZ (FY 2003)

Code No.	Name of DZ	patient/day	staff total	doctors total											nurses total	med. Technician physiotherapist										administrator
				general	pediatrics	gynecologist	internal medicine	emergency	TB	radiologist	dentist	biochemist	others	dentist		dent. assist.	lab. Tech.	radiographer	assist. Nurse	midwife	technician					
☐Federation of Bosnia and Herzegovina																										
FD1	Bosanska Krupa	182	124	17	5	3	1	1	0	1	1	2	0	3	48	20	0	2	6	3	0	9	0	39		
FD2	Velika Kladusa	200	154	28	9	1	2	3	0	1	0	5	0	7	50	22	2	1	3	2	7	7	0	54		
FD3	Sanski Most	250	313	25	5	2	4	5	4	1	1	3	0	0	186	31	3	8	7	4	0	9	0	71		
FD4	Kladanj	340	79	9	1	1	2	1	0	1	0	0	0	3	42	17	2	0	3	1	0	2	9	11		
FD5	Banovici	442	129	23	10	1	1	1	1	1	0	4	0	4	55	14	3	1	7	2	0	0	1	37		
FD6	Zenica	2,500	878	80	13	12	4	9	3	2	1	26	0	10	230	58	3	0	36	3	15	0	1	510		
FD7	Fojnica	350	46	9	2	1	1	1	1	(1)	(1)	3	(1)	0	13	9	(1)	3	3	1	0	2	0	15		
FD8	Visoko	200	169	33	11	3	3	2	4	1	2	6	1	0	73	25	4	6	6	4	0	4	1	38		
FD9	Gorazde	500	128	20	8	2	0	0	2	1	0	7	0	0	43	27	0	10	6	(1)	0	11	0	38		
FD10	Vitez	200	44	9	1	1	1	1	1	1	1	2	0	0	24	11	2	2	5	1	0	1	0	0		
FD11	Donji Vakuf	180	43	9	3	1	1	0	0	0	0	2	0	2	15	9	0	3	2	1	0	3	0	10		
FD12	Kiseljak	550	92	26	3	2	2	2	0	1	1	4	1	10	26	18	4	4	4	2	0	4	0	22		
FD13	Jablanica	231	63	8	2	2	0	0	1	1	0	2	0	0	24	10	0	2	4	3	0	1	0	21		
FD14	Citluk	230	55	9	1	1	1	1	0	0	0	1	1	3	21	10	0	1	6	1	2	0	0	15		
FD15	Stolac	150	56	17	5	1	1	1	4	0	1	2	1	1	22	8	1	2	2	2	0	0	1	9		
FD16	Prozor/ Rama	130	56	12	3	0	1	1	0	0	0	3	0	4	34	10	0	0	4	2	0	3	1	0		
FD17	Tomislavgrad	60	158	27	11	1	1	1	5	1	1	5	1	0	71	26	1	8	8	4	0	4	1	34		
FD18	Saraj Polje	40	103	28	10	4	0	2	0	0	0	6	0	6	48	13	7	0	5	1	0	0	0	14		
SUB TOTAL		6,735	2,690	389	103	39	26	32	26	13	9	83	5	53	1,025	338	32	53	117	37	24	60	15	938		
ratio		100.0%	14.5%											38.1%	12.6%									34.9%		
☐Republic of Srpska																										
RS1	Banja Luka	3,440	878	299	85	16	88	3	13	4	3	36	0	51	253	122	5	15	56	7	15	0	24	204		
RS2	Srbac	186	83	20	7	2	1	2	4	1	0	2	1	0	22	16	2	2	5	1	4	0	2	25		
RS3	Prijedor	1,520	264	59	29	4	0	0	1	2	1	6	0	16	82	46	5	10	19	3	1	0	8	77		
RS4	Bijeljina	966	213	60	4	4	4	0	33	1	1	7	1	5	77	31	0	8	10	3	9	1	0	45		
RS5	Zvornik	385	142	36	13	4	2	0	3	1	1	7	0	5	53	35	6	8	7	4	3	3	4	18		
RS6	Prnjavor	375	134	29	16	1	2	2	1	1	1	2	0	3	51	15	3	2	0	1	9	0	0	39		
RS7	Srebrenica	85	47	7	2	1	1	1	0	1	0	1	0	0	17	9	0	3	4	2	0	0	0	14		
RS8	Knezevo	112	43	8	5	0	1	0	0	1	0	1	0	0	12	6	0	1	2	1	2	0	0	17		
RS9	Srpski Brod	271	69	13	6	1	1	1	0	1	1	1	1	0	25	7	1	2	3	1	0	0	0	24		
RS10	Samac	157	82	19	2	2	1	0	6	1	1	1	0	5	23	13	4	2	6	1	0	0	0	27		
RS11	Rogatica	179	58	12	4	1	1	0	4	0	0	2	0	0	19	8	0	0	2	2	4	0	0	19		
RS12	Vlasenica	40	77	9	1	1	1	0	1	1	0	0	0	4	19	22	2	5	8	1	6	0	0	27		
SUB TOTAL		7,716	2,090	571	174	37	103	9	66	15	9	66	3	89	653	330	28	58	122	27	53	4	38	536		
ratio		100.0%	27.3%											31.2%	15.8%									25.6%		
☐Brcko																										
BR1	Brcko	300	206	32	7	4	2	3	4	2	1	3	0	6	112	30	8	3	5	1	3	0	10	32		
BR2	Maoca	140	25	4	0	0	0	3	0	0	0	0	0	1	9	3	0	0	2	1	0	0	0	9		
BR3	Bijela	90	16	0	0	0	0	0	0	0	0	0	0	0	10	5	0	0	1	1	0	0	3	1		
SUB TOTAL		530	247	36	7	4	2	6	4	2	1	3	0	7	131	38	8	3	8	3	3	0	13	42		
ratio		100.0%	14.6%											53.0%	15.4%									17.0%		
TOTAL		14,981	5,027	996	284	80	131	47	96	30	19	152	8	149	1,809	706	68	114	247	67	80	64	66	1,516		
ratio		100.0%	19.8%											36.0%	14.0%									30.2%		

(2) Medical Equipment Maintenance System

Maintenance and control of medical facilities and equipment in Bosnia and Herzegovina are not administered by the central government. In FBiH, each DZ

requests servicing and makes direct payment to servicing companies using the budget allocated from their respective Canton (province). DZ in RS and BR receive budgets respectively from their Ministry of Health and the Department of Health and make direct payments to service providers.

Although each DZ employs engineers to maintain their basic facilities, such as electricity, water, and sewage, but is not staffed by personnel specialized in the maintenance of medical equipment. For periodic maintenance and repair services, the DZ rely on the private maintenance companies affiliated with the equipment manufacturers, which are scarcely located in Bosnia and Herzegovina. Thus, maintenance service providers in Croatia and Serbia and Montenegro are often called for, which tend to cause delayed services, expensive fees, and other problems.

However, situations are improving from the time Phases I and II were implemented, including the fact that people can now travel more freely to and from the entities and neighboring countries. If an accurate list of information with regard to the maintenance service companies for each equipment item becomes available, the DZ will be able to receive quicker and less expensive services. Also, the follow-up survey of the Phases I and II confirmed that the personnel in charge of medical equipment maintenance at each DZ had a fairly good understanding of what to make note of regarding the operation and servicing of the procured equipment and were sharing information on maintenance service providers with other DZ's staff. Thus, the maintenance system and the environment are likely to improve further.

(3) Deployment of Radiological Technician: FD9 Gorazde

FD9 Gorazde is currently not equipped with radiological apparatus or staffed by a full-time radiological technician, although it had an X-ray room and a technician to conduct radiological examinations before the war. Due to the post-war administrative restructuring in the health sector, the radiological unit of the DZ was transferred to the secondary medical institution in its vicinity. However, because of an increasing number of war refugees returning to this area, the demand for primary health care, including X-ray examinations is rising in recent years. Thus, we have determined that the fortification of this DZ by re-establishing the radiology unit under this Project, as well as by employing a radiological technician, was urgently needed to cope with the rising demand.

2.5 Project Cost Estimation

2.5.1 Cost Estimation of the Project

The following cost estimate is provisional and would be further examined by the Government of Japan for the approval of the Grant.

Expenses to be borne by the Japanese Side (in million yen)

Entity	1 st period	2 nd period	Total
(1) Equipment			
FBiH			
Radiodiagnosis equipment	3.19	—	
Physiological function Examination equipment		1.26	
Laboratory equipment		0.97	
Emergency care equipment		0.98	
FBiH Total	3.19	3.21	6.40
RS			
Radiodiagnosis equipment	2.62	—	
Physiological function Examination equipment		0.81	
Laboratory equipment		0.7	
Emergency care equipment		0.62	
RS Total	2.62	2.13	4.75
BR			
Radiodiagnosis equipment	0.41	—	
Physiological function Examination equipment		0.09	
Laboratory equipment		0.09	
Emergency care equipment		0.14	
BR Total	0.41	0.32	0.73
Equipment cost	6.22	5.66	11.88
(2) Consultant Service	0.47	0.38	0.85
合計	6.69	6.04	12.73

Expenses to be borne by the Bosnian Side (in million yen)

Entity	1 st period	2 nd period	Total
FBiH	15.83	1.26	17.09
RS	6.41	0.84	7.25
BR	0.82	0.21	1.03
Total	23.06	2.31	25.37

1st period: Cost for renovation of radiology department, removal of existing apparatus and the other necessary items are capitalized.

2nd period: Japanese Yen 70 thousand (approximately one thousand KM) per one site for cleaning and arrangement cost in the laboratory rooms are capitalized.

Parameters of Cost Estimation

- ① Time of estimation : August 2004
- ② Exchange rate : 1US\$ = 109.58 yen, 1 Euro = 134.56 yen
- ③ Procurement/installation : 1st period – 9 months, 2nd period – 8 months
- ④ Order method : split order
- ⑤ Other : this Project shall be implemented in accordance with the Grant Aid system of the Japanese government

2.5.2 Operation and Maintenance Cost

(1) Revenue and Expenditure of Target DZ

Shown in Table 2-21 are the revenue and expenditure, as well as the breakdown of expenses, of each target DZ in FY 2003. Although the average expense/budget ratio is 100.6% and fairly balanced, more than half of the DZ are in the red, of which five registered 115% needing substantial budgetary supplementation in the following fiscal year. These DZ should take active measures to mitigate their deficit situation.

Individual items of expenditure vary slightly from DZ to DZ, but on the average, wages and other labor cost account for nearly 65%. The maintenance cost, including the purchase of pharmaceutical supplies, expendable materials, and equipment maintenance services, accounts for around 15%, and other expenses for a little over 20%.

Table 2-21: Revenue and Expenditure of Target DZ in FY 2003

Code No.	Site Name	[unit:thousand KM]										[B]/[A]	
		budget [A]	breakdown			expenditure [B]	breakdown						
			fund	articipatic	others		salaries	drugs	osumable	equipment	others		
□ Federation of Bosnia and Herzegovina													
FD1	Bosnska Krupa	2,472	1,800	46	626	2,622	1,562	78	18	384	580	106.1%	
FD2	Velika Kladusa	3,092	2,405	117	570	3,532	2,345	177	43	120	847	114.2%	
FD3	Sanski Most	3,521	2,599	48	874	3,769	2,371	66	121	25	1,186	107.0%	
FD4	Kladanj	1,273	888	32	353	1,268	601	48	23	139	458	99.6%	
FD5	Banovici	2,192	2,192	0	0	2,187	1,282	102	95	379	330	99.8%	
FD6	Zenica	8,297	6,862	131	1,304	8,698	5,935	2,500	132	0	130	104.8%	
FD7	Fojnica	785	502	47	235	776	464	4	8	0	300	98.9%	
FD8	Visoko	2,838	2,219	78	541	3,108	1,768	235	0	0	1,104	109.5%	
FD9	Gorazde	2,046	1,650	0	396	2,240	1,128	99	30	0	983	109.5%	
FD10	Vitez	1,528	1,449	58	21	1,575	910	16	22	0	627	103.1%	
FD11	Donji Vakuf	684	568	21	95	687	504	20	36	0	127	100.5%	
FD12	Kiseljak	1,648	1,463	35	150	1,647	950	27	87	5	577	99.9%	
FD13	Jablanica	1,182	1,104	78	0	1,182	1,024	85	3	0	70	100.0%	
FD14	Citluk	1,197	1,046	36	115	1,194	688	87	37	51	330	99.7%	
FD15	Stolac	901	824	51	26	896	564	78	32	33	189	99.4%	
FD16	Prozor/Rama	1,295	1,295	0	0	1,296	963	156	177	0	0	100.1%	
FD17	Tomislav Grad	1,800	1,542	156	60	2,166	1,542	300	24	0	300	120.3%	
FD18	Saraj Plje	2,125	2,015	69	41	3,553	2,798	3	32	0	720	167.2%	
SUB TOTAL		38,876.3	32,423.8	1,003.6	5,406.7	42,395	27,398.6	4,081.0	921.8	1,135.7	8,858.2		
ratio		100.0%	83.4%	2.6%	13.9%	100.0%	64.6%	9.6%	2.2%	2.7%	20.9%		
□ Republic of Srpska													
RS1	Banja Luka	12,976	8,414	1,788	2,774	12,284	7,445	288	136	681	3,734	94.7%	
RS2	Srbac	1,458	1,144	226	87	969	653	149	60	107	322	66.5%	
RS3	Prijedor	3,388	2,750	638	0	2,920	2,639	32	250	0	504	86.2%	
RS4	Bijeljina	4,744	4,381	242	121	1,954	1,812	46	42	54	158	41.2%	
RS5	Zvornik	1,783	1,523	180	80	1,206	1,026	120	60	0	540	67.6%	
RS6	Prnjavor	1,420	904	113	403	1,352	1,286	66	0	0	943	95.2%	
RS7	Srebrenica	410	360	48	2	422	365	34	24	0	24	103.0%	
RS8	Knezevo	648	529	118	0	574	436	55	37	46	109	88.6%	
RS9	Srpski Brod	899	558	62	279	814	664	69	37	43	116	90.6%	
RS10	Samc	980	730	220	30	634	540	84	0	10	361	64.7%	
RS11	Rogatica	706	541	28	138	667	155	78	40	34	360	94.4%	
RS12	Vlasenica	451	420	30	0	631	411	25	10	0	184	139.9%	
SUB TOTAL		29,862	22,253	3,694	3,914	24,426	17,432	1,045	696	975	7,355		
ratio		100.0%	73.0%	2.0%	12.1%	100.0%	63.4%	3.8%	2.5%	3.5%	26.7%		
□ Brcko													
BR1	Brcko	4,577	-	-	-	4,468	2,748	-	740	200	780	97.6%	
BR2	Moca	included budget of Brcko				included expenditure of Brcko							
BR3	Bijela	included budget of Brcko				included expenditure of Brcko							
SUB TOTAL		4577				4468	2748		740	200	780	97.6%	
ratio		100.0%				100.0%	61.5%		16.6%	4.5%	17.5%		
TOTAL		73,314.9				71,289.1	47,578.6	5,126.1	2,357.5	2,310.5	16,993.7	97.2%	
ratio		100.0%	-	-	-	100.0%	66.7%	7.2%	3.3%	3.2%	23.8%		

(2) Operation and Maintenance Cost

In this section, we will examine the operation and maintenance cost of certain equipment items, the introduction of which by this Project will likely lead to a

substantial increase in cost from previous years. Labor and utility costs, however, will not be discussed herein, as the personnel and the scale of facilities will remain virtually the same and are unlikely to increase in a significant way.

1) Cost for Maintenance Services and Spare Parts

We will estimate the annual cost for maintaining the diagnostic/testing equipment to be procured by this Project. As for the cost for maintenance services, the annual fees for regular inspection (1 – 2 times of servicing per year) to be paid to local servicing companies will be used. Cost for spare parts will be calculated based on the cost of each item consumed annually as derived from past records. X-ray tubes and other parts that are replaced once in a few years, their annual cost will be estimated based on the frequency of replacement. The annual cost of each DZ is shown in Table 2-22.

Table 2-22: Cost for Equipment Maintenance and Spare Parts

															[unit:KM]	
	RTG apparatus	Film X-ray development	Ultrasound	ECG	BioChem analyzer	Spectro photometer	Blood cell counter									
Maintenance service	2,900	70	1,400	700	1,400	700	1,400									
Cost of parts	4,500	70	2,900	4,500	700	4,500	1,400									
Total	7,400	140	4,300	5,200	2,100	5,200	2,800									
Code No.	Site Name	Q'ty	Cost	Q'ty	Cost	Q'ty	Cost	Q'ty	Cost	Q'ty	Cost	Q'ty	Cost	Q'ty	Cost	Total
□ Federation of Bosnia Herzegovina																
FD1	Bosnska Krupa	1	7,400	1	140	1	4,300	1	5,200	1	2,100					19,140
FD2	Velika Kladusa	1	7,400	1	140	1	4,300	1	5,200	1	2,100					19,140
FD3	Sanski Most	1	7,400	1	140	1	4,300	1	5,200	1	2,100	1	5,200	1	2,800	27,140
FD4	Kladanj	1	7,400	1	140	1	4,300	1	5,200							17,040
FD5	Banovici	1	7,400	1	140	1	4,300	1	5,200			1	5,200			14,840
FD6	Zenica	1	7,400	1	140	1	4,300	1	5,200					1	2,800	19,840
FD7	Fojnica	1	7,400	1	140	1	4,300	1	5,200			1	5,200	1	2,800	25,040
FD8	Visoko	1	7,400					1	5,200					1	2,800	15,400
FD9	Gorazde	1	7,400	1	140	1	4,300	1	5,200	1	2,100					19,140
FD10	Vitez					1	4,300	1	5,200			1	5,200			14,700
FD11	Donji Vakuf	1	7,400	1	140	1	4,300	1	5,200			1	5,200	1	2,800	25,040
FD12	Kiseljak	1	7,400	1	140	1	4,300	1	5,200			1	5,200			22,240
FD13	Jablanica	1	7,400	1	140	1	4,300	1	5,200			1	5,200	1	2,800	25,040
FD14	Citluk	1	7,400	1	140	1	4,300					1	5,200	1	2,800	19,840
FD15	Stolac	1	7,400	1	140	1	4,300	1	5,200			1	5,200	1	2,800	25,040
FD16	Prozor/Rama	1	7,400	1	140	1	4,300					1	5,200	1	2,800	19,840
FD17	Tomislav Grad	1	7,400	1	140	1	4,300	1	5,200	1	2,100	1	5,200	1	2,800	27,140
FD18	Saraj Plje	1	7,400	1	140	1	4,300					1	5,200			17,040
Total		16	118,400	16	2,240	17	73,100	15	78,000	5	10,500	12	62,400	10	28,000	372,640
□ Republic of Srpska																
RS1	Banja Luka	1	7,400	1	140	1	4,300	1	5,200	1	2,100			1	2,800	21,940
RS2	Srbac	1	7,400	1	140	1	4,300	1	5,200			1	5,200	1	2,800	25,040
RS3	Prijedor	1	7,400	1	140	1	4,300	1	5,200					1	2,800	19,840
RS4	Bijeljina	1	7,400			1	4,300	1	5,200	1	2,100				2,800	21,800
RS5	Zvornik	1	7,400	1	140	1	4,300	1	5,200	1	2,100	1	5,200	1	2,800	27,140
RS6	Prnjavor	1	7,400	1	140	1	4,300	1	5,200	1	2,100	1	5,200	1	2,800	27,140
RS7	Srebrenica	1	7,400					1	5,200							12,600
RS8	Knezevo	1	7,400	1	140	1	4,300	1	5,200			1	5,200	1	2,800	25,040
RS9	Srpski Brod	1	7,400	1	140	1	4,300					1	5,200	1	2,800	19,840
RS10	Samc	1	7,400	1	140	1	4,300	1	5,200					1	2,800	19,840
RS11	Rogatica	1	7,400	1	140	1	4,300	1	5,200					1	2,800	19,840
RS12	Vlasenica	1	7,400			1	4,300	1	5,200					1	2,800	19,700
Total		12	88,800	9	1,260	11	47,300	11	57,200	4	8,400	5	26,000	11	30,800	259,760
□ Brcko																
BR1	Brcko	1	7,400					1	5,200	1	8,400	1	5,200			26,200
BR2	Maoca	1	7,400					1	5,200							12,600
BR3	Bijela			1	10			1	5,200							5,210
Total		2	14,800	1	10			3	15,600	1	150	1	5,200			35,760

2) Cost of Examinations

Some of the equipment items to be procured under this Project will require expendable materials for each use, such as X-ray films and developing solutions for the X-ray apparatus, strip chart paper and gel for ultrasonic diagnosis and biochemical test,

and various reagents for laboratory test. Based on the domestic market price of each item, the cost of expendables for each test was calculated and shown in Table 2-23 below. The cost per test will form the basis of establishing the examination fees.

Table 2-23: Usage and Unit Price of Expendable Materials

Equipment	Comsumables		Market price(KM)	Consumption	Cost (KM)
RTG apparatus	Film	100pcs/set	105	1KM/1 film	1
Film X-ray development machine	Developer	20 litre	126	200KM (Developer/fixer) montly replacement	200
	Fixer	20 litre	74		
	Ultrasound	Gel	1kg		
ECG	Recording papar	1roll	14	200patient/roll	0.1
	ECG gel	1kg	10	5~10g/1 patient	0.1
	Recording papar	1roll	14	200patient/roll	0.1
Biochemistry analyzer	Reagent kit	Bichemistry test	0.9	per 1test item	1
Spectrophotometer	Reagent kit	Bichemistry test	0.9	per 1test item	1
Blood cell counter	Reagent kit	Diluter, cleaning solution	0.5	per 1 test	0.5
Ambulance vehicle	Fuel		1	1litre	1

On the assumption that the implementation of this Project will greatly enhance the efficiency of diagnosis and test at the target DZ, the annual increase in the examination cost is calculated at 10 – 20% of the actual figures recorded in the previous year.

Table 2-24: Annual Increase in Examination Cost

Code No.	Site Name	Radiology			Ultrasound		ECG		Laboratory				Total Increment of test
		Increment of test	RTG	Developer	Increment of test	Ultrasound	Increment of test	ECG	Increment of test	BioChem analyzer	Increment of test	Blood Cell counter	
□Federation of Bosnia Herzegovina													
FD1	Bosnska Krupa	38	460	2,400	31	75	82	196	598	7,171			10,302
FD2	Velika Kladusa	30	360	2,400	20	48	40	96	800	9,600			12,504
FD3	Sanski Most	90	1,075	2,400	20	48	116	278	716	8,590	1,757	10,542	22,933
FD4	Kladanj	30	360	2,400	20	48	40	96					2,904
FD5	Banovici			2,400	14	35	165	397	406	4,877			7,708
FD6	Zenica	125	1,500	2,400	138	331	600	1440			1,290	7,740	13,411
FD7	Fojnica	9	108	2,400	10	23	11	27	149		85	512	3,070
FD8	Visoko	8	96				8	19			300	1,800	1,915
FD9	Gorazde	30	360	2,400	5	12	10	24	419	5,030			7,826
FD10	Vitez				6	14	60	144	240	2,880			3,038
FD11	Donji Vakuf	28	336	2,400	480	1,152	50	120	400	4,800	246	1,476	10,284
FD12	Kiseljak	90	1,082	2,400	22	54	60	144	236	2,832			6,512
FD13	Jablanica	7	82	2,400	9	22	25	60	87	1,046	75	449	4,059
FD14	Citluk	20	240	2,400	20	48			230	2,760	460	2,760	8,208
FD15	Stolac	90	1,080	2,400	180	432	340	816	1,000	12,000	600	3,600	20,328
FD16	Prozor/Rama	20	240	2,400	40	96	60	144	80	960	100	600	4,440
FD17	Tomislav Grad	60	720	2,400	35	84	46	110	1,000	12,000	1,200	7,200	22,514
FD18	Saraj Plje	120	1,440	2,400	20	48			14	173			4,061
Total			9,539	38,400		2,570		4112		74,719		36,679	166,019
□Republic of Srpska													
RS1	Banja Luka	73	881	2,400	422	1,012	572	1374	422	5,059	422	2,530	13,255
RS2	Srbac	28	336	2,400	41	98	16	38	41	490	41	245	3,607
RS3	Prijedor	100	1,200	2,400			20	48			80	480	4,128
RS4	Bijeljina	48	572		44	105	150	360	44	523	44	262	1,822
RS5	Zvornik	20	240	2,400	42	102	143	342	42	509	42	254	3,847
RS6	Prnjavor	32	383	2,400	13	30	50	120	13	151	13	76	3,160
RS7	Srebrenica	26	317								85	511	828
RS8	Knezevo	41	496	2,400			20	48	60	720	40	240	3,903
RS9	Srpski Brod	165	1,981	2,400	130	311			130	1,555	130	778	7,025
RS10	Samc	14	164	2,400			16	38			40	240	2,843
RS11	Rogatica	14	166	2,400	18	44	17	41			18	109	2,759
RS12	Vlasenica	10	120		12	29	15	36			12	72	257
Total			6,856	21,600		1,730		2445		9,007		5,796	47,434
□Brcko													
BR1	Brcko	59	712				192	461	58	701			1,873
BR2	Maoca	3	37				46	110					148
BR3	Bijela	1	13	168			35	84					265
Total			762	168			655			701			2,286

3) Vehicle Maintenance Cost

The maintenance cost of the ambulance vehicles to be procured under this Project consists of fuel and servicing cost. The fuel cost is calculated as the cost of transporting patients from each DZ to upper-level hospitals once a day or 20 times a month, on the basis of the distance to the hospitals (mileage per liter = approx. 9 kilometers). The servicing cost is calculated as 5% of the annual fuel cost of each DZ. Table 2-25 shows the annual maintenance cost of the procured vehicles for each DZ.

Table 2-25: Estimation of Maintenance Cost of Procured Vehicles

【unit:KM】						
Code. No.	Site Name	Distance from Hospital (km)	Mileage (monthly) (km)	Fuel cost (monthly)	Maintenance cost (monthly)	Total
□Federation of Bosnia Herzegovina						
FD1	Bosnska Krupa	35	1,400	1,867	93	1,960
FD2	Velika Kladusa	70	2,800	3,733	187	3,920
FD3	Sanski Most	125	5,000	6,667	333	7,000
FD4	Kladanj	55	2,200	2,933	147	3,080
FD5	Banovici	40	1,600	-	-	-
FD6	Zenica	5	200	-	-	-
FD7	Fojnica	75	3,000	4,000	200	4,200
FD8	Visoko	50	2,000	2,667	133	2,800
FD9	Gorazde	*10	400	533	27	560
FD10	Vitez	5	200	267	13	280
FD11	Donji Vakuf	33	1,320	1,760	88	1,848
FD12	Kiseljak	65	2,600	3,467	173	3,640
FD13	Jablanica	50	2,000	2,667	133	2,800
FD14	Citluk	30	1,200	1,600	80	1,680
FD15	Stolac	35	1,400	1,867	93	1,960
FD16	Prozor/Rama	80	3,200	4,267	213	4,480
FD17	Tomislav Grad	80	3,200	4,267	213	4,480
FD18	Saraj Plje	*10	400	533	27	560
Total			34,120	43,093	2,155	45,248
□Republic of Srpska						
RS1	Banja Luka	*20	800	-	-	-
RS2	Srbac	55	2,200	-	-	-
RS3	Prijedor	30	1,200	1,600	80	1,680
RS4	Bijeljina	1	40	53	3	56
RS5	Zvornik	*20	800	1,067	53	1,120
RS6	Prnjavor	60	2,400	3,200	160	3,360
RS7	Srebrenica	50	2,000	2,667	133	2,800
RS8	Knezevo	60	2,400	3,200	160	3,360
RS9	Srpski Brod	130	5,200	6,933	347	7,280
RS10	Samc	75	3,000	4,000	200	4,200
RS11	Rogatica	50	2,000	2,667	133	2,800
RS12	Vlasenica	50	2,000	2,667	133	2,800
Total			24,040	28,053	1,403	29,456
□Brcko						
BR1	Brcko	1	40	53	2.7	56
BR2	Maoca	17	680	907	45	952
BR3	Bijela	20	800	1,067	53	1,120
Total			1,520	2,027	101	2,128

*shows an estimated mileage

4) Annual Increase in O/M Cost

Based on the estimation of the increases in the cost of equipment maintenance, medical examinations, and vehicle maintenance, the estimated increases resulting from the implementation of this Project are shown in Table 2-26 below. The ratio of increase from the previous year varies from DZ to DZ but within the range of 1 to 6%. The rate of increase is 1.31% for the whole of FBiH, 1.19% for RS, and 0.97% for BR. These increases are minor and would not strain the finances of the implementing agencies and the target DZ.

Table 2-26: Estimated Increase in O/M Cost Arising from Procured Equipment

[unit: KM]							
Code No.	Site Name	Maintenance	Operation	Vehicle	Total [A]	Annual Expenditure [B]	Rate [A]/[B]
□ Federation of Bosnia Herzegovina							
FD1	Bosnska Krupa	19,140	10,302	1,960	31,402	2,621.8	1.13%
FD2	Velika Kladusa	19,140	12,504	3,920	35,564	3,532.4	0.98%
FD3	Sanski Most	27,140	22,933	7,000	57,073	3,768.7	1.41%
FD4	Kladanj	17,040	2,904	3,080	23,024	1,268.4	1.77%
FD5	Banovici	14,840	7,708	-	22,548	2,187.4	0.97%
FD6	Zenica	19,840	13,411	-	33,251	8,697.6	0.36%
FD7	Fojnica	25,040	3,070	4,200	32,310	776.4	4.24%
FD8	Visoko	15,400	1,915	2,800	20,115	3,107.6	0.63%
FD9	Gorazde	19,140	7,826	560	27,526	2,240.0	1.12%
FD10	Vitez	14,700	3,038	280	18,018	1,575.1	1.09%
FD11	Donji Vakuf	25,040	10,284	1,848	37,172	687.0	5.12%
FD12	Kiseljak	22,240	6,512	3,640	32,392	1,646.9	1.90%
FD13	Jablanica	25,040	4,059	2,800	31,899	1,181.9	2.62%
FD14	Citluk	19,840	8,208	1,680	29,728	1,193.8	2.37%
FD15	Stolac	25,040	20,328	1,960	47,328	895.7	4.88%
FD16	Prozor/Rama	19,840	4,440	4,480	28,760	1,295.7	2.12%
FD17	Tomislav Grad	27,140	22,514	4,480	54,134	2,166.0	2.51%
FD18	Saraj Plje	17,040	4,061	560	21,661	3,552.8	0.59%
Total FBiH					583,907	42,395.3	1.31%
□ Republic of Srpska							
RS1	Banja Luka	21,940	13,255	-	35,195	12,283.6	0.27%
RS2	Srbac	25,040	3,607	-	28,647	969.2	2.16%
RS3	Prijedor	19,840	4,128	1,680	25,648	2,920.0	0.73%
RS4	Bijeljina	21,800	1,822	56	23,678	1,953.7	1.09%
RS5	Zvornik	27,140	3,847	1,120	32,107	1,206.0	1.79%
RS6	Prnjavor	27,140	3,160	3,360	33,660	1,352.2	1.44%
RS7	Srebrenica	12,600	828	2,800	16,228	422.2	3.54%
RS8	Knezevo	25,040	3,903	3,360	32,303	574.0	4.61%
RS9	Srpski Brod	19,840	7,025	7,280	34,145	814.0	3.54%
RS10	Samc	19,840	2,843	4,200	26,883	633.6	2.64%
RS11	Rogatica	19,840	2,759	2,800	25,399	666.0	3.72%
RS12	Vlasenica	19,700	257	2,800	22,757	630.0	3.53%
Total RS					336,650	24,424.6	1.19%
□ Brcko							
BR1	Brcko	26,200	1,873	56	41,829	4,468	0.97%
BR2	Maoca	12,600	148	952			
BR3	Bijela	5,210	265	1,120			
Total BR					41,829	4,468.0	0.97%

2.6 Other Relevant Issues

(1) Performance of the Obligations undertaken by the Recipient Side

It is essential that all undertakings of the recipient side, such as smooth customs clearance of the procured equipment, arrangements necessary for transporting the equipment within Bosnia and Herzegovina, renovation works necessary for the installation and operation of the equipment, and obtainment of required licenses for operating renovated x-ray rooms, will be carried out by the BiH implementing agencies and target DZ without delay.

While FBiH and RS are familiar with carrying out such undertakings from the experiences of Phases I and II, the Brcko District, in which a Grant Aid project will be implemented for the first time, will need proper guidance through periodic coordination meetings.

Before the procurement and installation of the x-ray equipment, it is important to spend ample time discussing the details of renovation works with the personnel of each DZ so that the equipment will be installed without delay. Timing of discussions to confirm certain facts and understanding should be determined in relation to the following events or documents: i) approval of x-ray equipment specifications after the conclusion of the supplier contract, ii) working drawings to be drafted by the equipment supplier during the ordering and manufacturing processes, and iii) x-ray equipment installation schedule during customs clearance of the equipment.

(2) Exemption from VAT

The central government of Bosnia and Herzegovina decided to introduce indirect taxes in 2006, but has yet to find specific ways to apply the new tax law to the two entities of FBiH and RS and the District of Brcko in harmony with their current taxation systems. Assuming that the new tax law may become effective during the implementation of Phase III, the E/N should provide that this project shall be tax exempt or qualified for refund, to which both countries should agree before signing.

CHAPTER 3

PROJECT EVALUATION AND RECOMMENDATIONS

CHAPTER 3 PROJECT EVALUATION AND RECOMMENDATIONS

3.1 Project Effects

This proposed plan is the third phase of the Project for the Improvement of Medical Equipment for Primary Health Care Institutions (Phase I and Phase II) that has been implemented under Japan's Grant Aid scheme. This project aims to contribute to the rehabilitation and improvement of PHC in Bosnia and Herzegovina by enhancing the diagnostic capabilities (diagnostic imaging and physiological / laboratory tests) of each target DZ, as well as establishing a sound emergency care system (admission of emergency patients and transfer to higher-level medical institutions) in each administrative unit.

Table 3-1: Effect and Improvement attained by the Project

Present Conditions & Problems	Measures taken by Phase III	Effects and Improvement
<p>The target 33 DZ are supposed to play a central role in providing PHC for the 1.47 million people living in their respective jurisdictions. However, they are struggling to deliver adequate services with deteriorated equipment that cannot be renewed under strained finances resulting from political changes and stagnant economy following the collapse of the former Yugoslavia and the Bosnian war.</p>	<p>Phase III will renew and / or supplement deteriorated equipment related to x-ray examinations, physiological / laboratory tests, and emergency care of the 33 DZ that are core providers of PHC.</p> <ul style="list-style-type: none"> •FBiH: 18 DZ 19 equipment items •RS: 12 DZ 19 equipment items •BR: 3 DZ 16 equipment items 	<p>Upgrading of the equipment of the 33 target DZ will improve their capacities to conduct radiological examinations and physiological / laboratory tests and to deliver emergency care, thereby improving overall PHC services in their respective communities.</p> <p>Each DZ will become able to conduct an increasing number of tests (x-ray, ultrasound, and laboratory tests) and transfer more emergency patients to higher-level institutions, resulting in enhanced quality of diagnosis and medical care.</p>

Expected effects as a result of implementing this project are discussed below.

(1) Direct Effects

1) Enhanced Diagnostic Functions of Target DZ

Provision of necessary equipment for the 33 target DZ through the implementation of this project will enable the DZ to perform more precise and accurate diagnosis and to deliver more prompt and proper services. As a result, the diagnostic capabilities of the DZ will improve both qualitatively and quantitatively, reducing the waiting time of patients requiring medical tests and examinations, and increasing the number of diagnostic imaging examinations and physiological/laboratory tests.

2) Enhanced Emergency Care Functions of Target DZ

If this project is implemented, 29 of the 33 DZ will be provided with emergency vehicles and all 33 DZ with defibrillators, reanimation kits, laryngoscopes, aspirators, and other emergency care equipment. As a result, the emergency care functions of the target DZ will be greatly enhanced, and they will become the highly reliable fast access to emergency care for the residents of their respective administrative units.

3) Improvement of X-Ray Protection at the Radiology Departments of Target DZ

This project will procure expensive x-ray protective doors and leaded glass windows under Japan's grant aid, thereby improving the x-ray protection of the target DZ and ensuring safety and effective utilization of the radiological equipment to be procured under this project.

(2) Indirect Effects

1) Enhanced PHC through Upgraded DZ

DZ not only provide PHC services but also play a central role in conducting medical examinations and tests under the newly introduced Family Medicine System. Therefore, upgrading the DZ will promote PHC activities, build foundation of the Family Medicine System, and provide better access to emergency care, thereby improving the overall medical services for the target communities.

The implementation of the project will upgrade 33 DZ, which will have a significant positive effect on the enhancement of PHC, as it will cover about 25% of total of 131 DZ that play an essential role in the delivery of PHC throughout the country. Combining the previous phases, this project will cover a total of 85 DZ (27 in Phase I, 25 in Phase II, and 33 in Phase III), which will account for about 65% of 131 DZ.

2) Improvement of Residents Health in the Areas Around Target DZ

Implementation of this project will improve the diagnosis and emergency care functions, as well as preventive care, of the target DZ on the primary level, which as a result will enable the secondary and tertiary medical facilities to provide more efficient treatment, leading to the enhancement of well-being of the residents. The third phase will upgrade 33 DZ, the population coverage of which is 1.47 million, benefiting about 36% of the total population of Bosnia and Herzegovina of 4.10 million (United Nations' 2002 statistics).

3.2 Recommendations

To ensure smooth implementation of this project, as well as its maximum lasting effects, we

recommend that the governments of Bosnia and Herzegovina to take on the tasks described below.

1) Establishment of the Equipment Maintenance System

Experiences of implementing Phases I and II indicate the need for creating an environment that ensures proper equipment maintenance. Although FBiH has, under the auspice of UNDP, established public equipment maintenance centers within the tertiary-level hospitals in Tuzla, Sarajevo, and Mostar as part of the nationwide maintenance systems, services of such maintenance centers are limited to the hospitals and hardly reach DZ outside those three cities. On the other hand, as the country recovers from the damages of war, its medical equipment market is becoming revitalized, and a number of equipment manufactures have established local dealerships with enhanced service capabilities in BiH.

Thus, an effective equipment maintenance system should be developed, by clarifying the roles and functions of maintenance centers, utilizing the manufacturers' agencies, etc.

2) Continuous Development of FM System by the BiH Government

Most of the target DZ of this project have established FM teams that are already carrying out various activities with a certain level of awareness and knowledge of family medicine. However, our survey identified at least one DZ in the mountainous region of East Spruska, to which no doctor was willing to be assigned due to difficult access to dispersed homes and other hard working conditions. Therefore, in expanding the FM program throughout the country, various conditions unique to each region need to be taken into consideration. At the same time, creating incentives to motivate doctors to be involved in FM will be important.

3) Disposal of Medical Waste

In BiH, regulations over medical waste disposal that were enacted during the former Yugoslavia Era are still in force. However, these regulations do not contain provisions concerning the disposal of used film developing solution. While some large-scale DZ contract with outside vendors (silver collectors) to dispose waste fixing/developing solutions, many others discharge untreated solutions directly into the sewerage system.

As the situation is such that the film-developing machine to be procured by this project will not conflict with the current regulations though it is recommended that each DZ dispose waste solutions by contracting out to specialized vendors. At the same time, new regulations that provide the requirements and procedures of proper disposal of film processing agents as industrial waste need to be formulated in the near future.

APPENDIX

1. Member of the Study Team
2. Study Schedule
3. List of Parties Concerned in Recipient Country
4. Minutes of Discussion
5. Cost Estimation Borne by the Recipient Country
6. References

1. Member List of the Study Team

(1) Basic Design Study (February 8 to March 13)

Mr. Tamotsu IKEZAKI	Team Leader Grant Aid Management Dept. Japan International Cooperation Agency
Dr. Keiko TSUYUKI	Technical Adviser International Medical Center of JAPAN Ministry of Health Labor & Welfare
Mr. Taizo SHISHIDO	Project Manager Architect 1 Matsuda Consultants International Co., Ltd.
Mr. Yasuo Horigome	Architect 2 Matsuda Consultants International Co., Ltd.
Mr. Kenji KAWAZOE	Quantity Surveyor Matsuda Consultants International Co., Ltd.
Mr. Hiroshi TASEI	Equipment Planner 1/Procurement & Estimation International Techno Center Co., Ltd.
Mr. Shuichi MURASHITA	Equipment Planner 2 International Techno Center Co., Ltd.
Mr. Masahiko OTSUKA	Interpreter Matsuda Consultants International Co., Ltd.

(2) Explanation of Draft Report(June 27 to July 16)

Mr. Keiichi MURAOKA	Team Leader Resident Representative Austria Office Japan International Cooperation Agency
Dr. Keiko TSUYUKI	Technical Adviser International Medical Center of JAPAN Ministry of Health Labor & Welfare
Mr. Taizo SHISHIDO	Project Manager Architect 1 Matsuda Consultants International Co., Ltd.
Mr. Hiroshi TASEI	Equipment Planner 1/Procurement & Estimation International Techno Center Co., Ltd.
Mr. Masahiko OTSUKA	Interpreter Matsuda Consultants International Co., Ltd.

2. Study Schedule

(1) Basic Design Study

No	Date	Officials		Consultant						
		Team leader	Technical Adviser	Project Manager/ Architect 1 (PM)	Equipment 1/ Procurement Planner	Quantity Surveyer	Architect 2	Equipment 2	Interpreter	
		Tamotsu IKEZAKI	Keiko TSUYUKI	Taizo SHSISHIDO	Hiroshi TASEI	Kenji KAWAZOE	Yasuo HOROGOME	Shuichi MURASHITA	Masahiko OTSUKA	
1	8-Feb	Sun			Narita→Frankfurt Frankfurt→Vienna					
2	9-Feb	Mon			Courtesy Call to JICA Office and the Embassy of Japan in Vienna Vienna→Sarajevo Internal Meeting					
3	10-Feb	Tue			Courtesy Call to Ministry of Foreign Affairs Joint Meeting with Ministry of Foreign Affairs and MOH of FD, BR and RS)					
4	11-Feb	Wed			FD16 survey					
					Team A		Team B		Team A	
5	12-Feb	Thu			Sarajevo→Banja Luka Discussion with Ministry of Health of RS		Sarajevo→Banja Luka RS8 survey		Same as PM	
6	13-Feb	Fri			RS1 survey		RS2 survey		Same as PM	
7	14-Feb	Sat			RS3 survey		Survey on Procurement RS6 survey		Same as PM	
8	15-Feb	Sun			RS1 survey		Survey on Procurement RS6 survey		Same as PM	
9	16-Feb	Mon			RS10 survey →Brcko		RS9 survey		Same as PM	
10	17-Feb	Tue			Discussion with Health Dept. of BR BR1 survey		FD3 survey →Bihac		Same as PM	
11	18-Feb	Wed			BR2 Survey BR3 survey		FD2 survey		Same as PM	
12	19-Feb	Thu			RS4 survey		FD1 survey Phase 2 site(Petrovac) survey →Tuzla		Same as PM	
13	20-Feb	Fri			RS5 survey		FD5 survey FD4 survey		Same as PM	
14	21-Feb	Sat			Phase2 site (Bratunac) survey RS7 survey		RS12 survey		Same as PM	
15	22-Feb	Sun			Internal Meeting					
16	23-Feb	Mon			Discussion with World Bank		Survey on Architect and procurement		FD11 survey	
17	24-Feb	Tue			RS11 survey Phase1 site (Sokolac)survey		FD12 survey FD18 survey		Same as PM	
18	25-Feb	Wed			FD9 survey Phase2 site(Ustikolina) survey		Survey on Architect and procurement →Mostar		FD13 survey	
19	26-Feb	Thu			FD8 survey FD7 survey		Survey on Architect and procurement		FD17 survey Phase 2 site(Ljubuski) survey	
20	27-Feb	Fri			FD10 survey FD6 survey		Survey on Architect and procurement		FD14 survey	
21	28-Feb	Sat			Survey on Architect and procurement		FD15 survey →Sarajevo		Same as PM	
22	29-Feb	Sun	Narita→Vienna		Internal Meeting					
23	1-Mar	Mon	Courtesy Call to JICA and the Embassy of Japan in Vienna Vienna→Sarajevo		Internal Meeting					
24	2-Mar	Tue	Courtesy Call to Ministry of Foreign Affairs Discussion with World Bank		Sarajevo→Vienna Vienna→Frankfurt					
25	3-Mar	Wed	FD12 survey		Frankfurt→Narita					
26	4-Mar	Thu	→BanjaLuka, Discussion with RSMOH RS1 survey							
27	5-Mar	Fri	Phase1 site (Derventa) survey →Brcko, Discussion with BRMOH, BR1 survey							
28	6-Mar	Sat	→Sarajevo							
29	7-Mar	Sun	Internal meeting							
30	8-Mar	Mon	Phase2 site(Capljena) survey							
31	9-Mar	Tue	Discussion on the Minutes with FD, RS and BR							
32	10-Mar	Wed	Singing of Minutes with FD, RS and BR							
33	11-Mar	Thu	Report to the Embassy of Japan in BiH Sarajevo→Vienna							
34	12-Mar	Fri	Report to the Embassy of Japan in Austria Vienna→		Vienna→Frankfurt					
35	13-Mar	Sat	Narita		Frankfurt→Narita					

(2) Explanation of Draft Report

No	Date		Officials		Consultants		
			Leader	Technical Advisor	Project Manager	Equipment/ Procurement Planner	Interpreter
			Keiichi MURAOKA	Keiko TSUYUKIT	Taizo SHISHIDO	Hiroshi TASEI	Masahiko OTUKA
1	27-Jun	Sun		Narita → Vienna			
2	28-Jun	Mon	Courtesy Call to JICA Office and the Embassy of Japan in Vienna				
			Vienna →Sarajevo				
			Courtesy Call to Ministry of Foreign Affairs and the Embassy of Japan in Bosnia and Herzegovina				
3	29-Jun	Tue	Joint Meeting with Ministry of Foreign Affairs and MOH of FD, BR and RS)				
4	30-Jun	Wed	Sarajevo→Vienna		Meeting with DZ in FD at Sarajevo(FD6,8,10,16)		
			Meeting with DZ in FD at Sarajevo(FD4,5,9,11,18)				
5	1-Jul	Thr	Meeting with DZ in FD at Sarajevo(FD7,13,14,15)				
			Meeting with DZ in FD at Sarajevo(FD1,2,3,15)				
6	2-Jul	Fri	Discussion on the Minutes with Ministry of Health of FD				
			Sarajevo→Brcko				
7	3-Jul	Sat	Meeting with DZ in BR at Brcko(BR1~3)				
			Discussion on the Minutes with Ministry of Health of BR				
8	4-Jul	Sun	Brcko→Banja Luka				
9	5-Jul	Mon	Meeting with DZ in RS at Banja Luka(RS4,5,11)				
			Meeting with DZ in RS at Banja Luka(RS8,9,0)				
10	6-Jul	Tue	Meeting with DZ in RS at Banja Luka(RS1,3,6,12)				
11	7-Jul	Wed	Discussion on the Minutes with Ministry of Health of RS				
			Banja Luka→Sarajevo				
12	8-Jul	Thu	Signing of Minutes of Discussion with MOH of FD, BR and RS				
			Sarajevo →Vienna		Survey on Procurement		
13	9-Jul	Fri	Report to the Embassy of Japan in Vienna		<Consultant> Survey on RS5		
			Report to JICA Office and signing of the Minutes				
			Vienna →				
14	10-Jul	Sat	→Narita		Survey on Procurement		
15	11-Jul	Sun	Sarajevo→Bihac				
16	12-Jul	Mon	Survey on FD2Velika Kladusa Velika Kladusa→Sarajevo				
17	13-Jul	Tue	Discussion with Ministry of Health of FD				
18	14-Jul	Wed	Report to Ministry of Foreign Affairs and the Embassy of Japan in Bosnia and Herzegovina				
			Sarajevo→Vienna				
19	15-Jul	Thu	Report to the Embassy of Japan and JICA Office				
20	16-Jul	Fri	Vienna→				
			→Narita				

3. List of Parties Concerned in the Recipient Country

Ministry of Foreign Affairs

Department of Multilateral Relations Reconstruction Unit	
Head of the Unit	Mirza Pinjo
World Bank	
Operations Analyst	Mirjana Karahasanovic
PMU	
General Manager	Ibrahim Ramic
Deputy Director	Drazenka Rados

Federation of Bosnia and Herzegovina

Federal Ministry of Health

Minister	Tomo Lucic
Assistant Minister	Goran Cerkez Vildana Doder

Dom Zdravlja Bosanska Krupa

Director	Suad Mesic
Accountant	Zaharje Mesic

Verica Kladusa

Director	Mirsad Puric
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Sanski Most

Director	Enis Sabanovic
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Kladanj

Director	Ahmet Cavkunovic
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Banovic

Director	Enver Brigic
----------	--------------

Zenica

Director	Alic Feric
Accountant	Druda Fevzija

Fojnica

Director	Mustafa Serdarevic
----------	--------------------

Visoko

Director	Limo Avdo
Deputy Director	Lejla Semic

Gorazde

Director	Edina Cendic
----------	--------------

Donj Vakuf

Director	Senad Alibegovic
Chief Engineer	Jashinko Ratkusic

Kiseljak

Director	Marko Frankovic
----------	-----------------

Jablanica

Director	Jovo Vasiljenic
----------	-----------------

Citluk

Director	Jadranka Odak
Accountant	Pero Sego

Prozor/Rama

Director	Jozo Ivanicevic
----------	-----------------

Tomislavgrad

Director	Andrija Gudelj
Accountant	Doma Kelava

Saraj Polje

Director	Dzenana Tanovic
Electrical Engineer	Mehemed Kodzaka
Accountant	Sanela Hanic

Republic of Srpska

Ministry of Health and Social Welfare

Minister	Marin Kvaternik
Assistant Ministre	Milan Latinovic Nina Dodic

Dom Zdravlja Banja Luka Director Chief of Laboratory	Goran Turjacanin Mirjnanic-Azaric Bosa
Srbac Director	Miomir Saula
Prijedor Director Chief of Laboratory	Spomenka Pavkovic Mirela Jovanovic
Bijeljina Director	Drago Novakovic
Zvornik Director Chief Engineer	Ljubomir Deric Zeljko Radovic
Prnjavor Director	Milijana Lazarevic
Serebranica Director Chief of Laboratory Accountant	Abdurahman Malkic Stanka Lemez Sladana Bozic
Knezevo Director Assitant Director	Bore Skelic Milenko Paden
Srpski Brod Director	Drago Rendic
Samac Director Chief of Pulmology	Agoslav Gluvacevic Ozeren Stanimirovic
Rogatica Accountant Administration	Milos Vukovic Sradjan Bakmaz
Vlasenica Director Head Nurse	Stoja Stijepic Gordana Dasic
Brcko District Bosnia and Herzegovina Department of Health Assistant for Cheif Primary Health Service Assistant	Rasim Karic Vahdet Mulkanocvic Ilija Davidovic
Dom Zdravlja Brcko Director Epidmologist	Goran Umicevic Fatima Decejic
Maoca Director	Sabrija Dedic
Bijela Director	Admir Candic

4. Minutes Of Discussion

(1) Basic Design Study

MINUTES OF DISCUSSIONS
BASIC DESIGN STUDY
ON THE PROJECT FOR IMPROVEMENT OF MEDICAL EQUIPMENT AND FACILITIES
IN PRIMARY HEALTH CARE INSTITUTIONS PHASE III
IN BOSNIA AND HERZEGOVINA

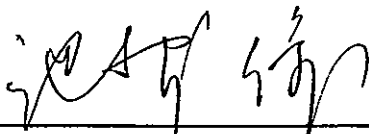
In response to a request from the Government of Bosnia and Herzegovina (hereinafter referred to as "the Government"), the Government of Japan decided to conduct a Basic Design Study on the project for Improvement of Medical Equipment and Facilities in Primary Health Care Institutions Phase III (hereinafter referred to as "the Project") and entrusted the study to the Japan International Cooperation Agency (hereinafter referred to as "JICA").

JICA sent to Bosnia and Herzegovina the Basic Design Study Team (hereinafter referred to as "the Team"), which is headed by Mr. Tamotsu Ikezaki, Director, Second Project Management Division, Grant Aid Management Department, Japan International Cooperation Agency, and is scheduled to stay in the country from 9 February to 11 March.

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

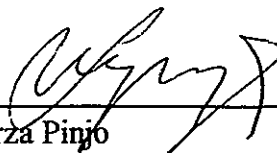
Sarajevo, March 10, 2004



Mr. Tamotsu Ikezaki
Leader
Basic Design Study Team
Japan International Cooperation Agency



Mr. Tomo Lucic, MR., Ph
Minister of Health
Federation of Bosnia and Herzegovina



Mr. Mirza Pinjo
Head of the Unit
Department for Multilateral relations,
Ministry of Foreign Affairs,
Bosnia and Herzegovina

ATTACHMENT

1. Objectives of the Project

The objective of the project is to improve the Primary Health Care service in Dom Zdravlja through procurement of medical equipment and/or renovation of the facilities.

2. Project site

After discussions with the team, Dom Zdravljas shown in Annex 1 were requested as the project sites by the Government.

3. Responsible and Implementing Agency

Responsible Ministry: Ministry of Health, Federation of Bosnia and Herzegovina

Executing Agency: Department of Medical Affairs and Organization of Health System

4. Items requested by the Government

After discussions with the Team, following items were finally requested by the Government. JICA will assess the appropriateness of the request and will report the findings to the Government of Japan. Therefore, the both sides agreed that the final components requested by the Government may differ from the below items.

- (1) Procurement of the equipment described in Annex 2
- (2) Renovation of facilities described in Annex 3

5. Japan's Grant Aid Scheme

- 5-1 The Government understands the Japan's Grant Aid Scheme explained by the Team, as described in Annex 4.
- 5-2 The Government will take necessary measures described in Annex 5 for smooth implementation of the Project to be implemented on condition that the Japan's grant aid is extended to the Project.

6. Schedule of the Study

- 6-1 JICA will prepare the draft report in English and dispatch a mission in order to explain its contents in June 2004.
- 6-2 In case that the contents of the report is accepted in principle by the Government, JICA will complete the final report and send it to the Government around September 2004.

7. Other relevant issues

7-1 Both sides agreed that "Computer" would not be included in the requested item of the project.

7-2 The Government agreed to bear the appropriate budget for getting radiology protection in the project site that needs adaptation of X-ray diagnosis room.

7-3 The Government will allocate the necessary budget and personnel for the Project for securing sustainable and proper operation and maintenance of the equipment included in the Project.

Annex 1: Requested Project Sites

Annex 2: Requested Equipment List

Annex 3: Requested Sites for Renovation of Facilities

Annex 4: Japan's Grant Aid Scheme

Annex 5: Major Undertakings to be taken by Each Government

Annex 6: Site Location Map

Annex 1 Requested Project Sites

Site Code	Name of DZ
FD1	Bosanska Krupa
FD2	Velika Kladusa
FD3	Sanski Most
FD4	Kladanj
FD5	Banovici
FD6	Zenica
FD7	Fojnica
FD8	Visoko
FD9	Gorazde
FD10	Vitez
FD11	Donji Vakuf
FD12	Kiseljak
FD13	Jablanica
FD14	Citluk
FD15	Stolac
FD16	Prozor/Rama
FD17	Tomislavgrad
FD18	Saraj Polje
Total	18 sites

Annex 2 Requested Equipment List

Site code	FD1	FD2	FD3	FD4	FD5	FD6	FD7	FD8	FD9	FD10	FD11	FD12	FD13	FD14	FD15	FD16	FD17	FD18
Equipment/Project site	Bosanska Krupa	Velika Kladusa	Sanski Most	Kladanj	Banovici	Zenica	Fojnica	Visoko	Gorazde	Vitez	Donji Vakuf	Kiseljak	Jablanica	Citluk	Stolac	Prozor/Rama	Tomislavgrad	Saraj Polje
1 RTG apparatus	1	1	1	1		2	1	1	1		1	1	1	1	1	1	1	1
2 Film X-ray development machine	1	1	1	1	1	2	1		1		1	1	1	1	1	1	1	1
3 Ultrasound	1	1	2	1	1	2	1	1	1	2	1	1	1	1	1	1	2	1
4 Spirometer	1	1	1	1	2	2	1			3	1	1	1	1	1	1	1	1
5 ECG	2	4	5	1	3	1	2	1	2	3	2	1	1	2	2	1	4	1
6 Biochemistry analyzer	1	1	1	1	1	1			1	1	1	1	1	2		1	1	1
7 Spectrophotometer	1	1	2	1	2	2	1		1	1	1		1	1	1	1	1	1
8 Blood cell counter	1	1	1	1	1	1	1	1	1	1	1		1	2	1	1	1	1
9 Microscope	2	3	2	1	2	2	1		1	1	2	1		2	1	1	2	1
10 Centrifuge	1	3	2	2	2	1	1	1	1	1	1	1	1	2	1	1	3	1
11 Steriliser	3	5	2	2	5	2	1		1	2	2	1	1	7	2	2	1	1
12 Balance	1	1	1	2	2	2	1		1	2	1			1	1	1	1	1
13 Destilator	1	2	1	1	2	1	1		1	2	1	1	1	2	1	1	1	1
14 Washing machine for lab. glassware	1	1	1	2	1	2	1	1	1	1	1	1	1	1	1	1	1	1
15 Ambulance vehicle	2	2	2	1	1	2	1	1	1	1	2	1	1	2	1	1	2	1
16 Defibrillator	1	1	2	1	1	1	1		1	2	1	1	1	2	1	1	1	1
17 Reanimation set	1	3	2	2	2	4	1	4	2	1	2	1	1	2	1	2	2	1
18 Laryngoscope	1	3	1	1	2	1	1	3	1	4	2	1	1	2	1	2	3	1
19 Aspirator	1	2	2	1	2	1	1	3	1	2	1	1		3	1	2	2	1


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Annex 3 Requested Sites for Renovation of Facilities

Site Code	Name of DZ
FD2	Velika Kladusa
FD4	Kladanj
FD6	Zenica
FD9	Gorazde
FD14	Citluk
FD16	Prozor/Rama
Total	6 sites

cb



Japan's Grant Aid Program

1. Japan's Grant Aid Procedures

(1) The Japan's Grant Aid Program is executed by 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 the Cabinet of Japan)
Determination of Implementation	(Exchange of Notes between both Governments)
Implementation	(implementation of the Project)

(2) Firstly, an application or a request for a Grant Aid project submitted by the recipient country is examined by the Government of Japan (the Ministry of Foreign Affairs) to determine whether or not it is eligible for Japan's Grant Aid. If the request is deemed appropriate, the Government of Japan assigns JICA 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 Program, based on the Basic Design Study Report prepared by JICA and the results are then submitted to the cabinet for approval.

Fourthly, the project approved by the cabinet becomes official with the Exchange of Notes signed by the Government of Japan and the recipient country.

Finally, for the implementation of the Project, JICA assists the recipient country in preparing contracts and so on.

2. Contents of the Study

(1) Contents of the Study

The purpose of the Basic Design Study conducted by JICA on a requested project is to provide a basic document necessary for appraisal of the project by the Japanese Government. The contents of the Study are as follows:

a) confirmation of the background, objectives, benefits of the project and also institutional capacity of agencies concerned of the recipient country necessary for project implementation,

b) evaluation of the appropriateness of the project for the Grant Aid Scheme from a technical, social and economical point of view,

c) confirmation of items agreed on by the both parties concerning a basic concept of the project.

- d) preparation of a basic design of the project,
- e) 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.

Final project components are subject to approval by the Government of Japan and therefore may differ from an original request. Implementing the project, the Government of Japan requests the recipient country to take necessary measures involved which are itemized on Exchange of Notes.

(2) Selection of Consultants

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

The consulting firm(s) used for the study is (are) recommended by JICA to a recipient country after Exchange of Notes, in order to maintain technical consistency and also to avoid any undue delay in implementation should the selection process be repeated.

3. Japan's Grant Aid Scheme

(1) What is Grant Aid?

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

(2) Exchange of Notes (E/N)

Both Governments concerned extend Japan's Grant Aid in accordance with the Exchange of Notes in which the objectives of the Project, period of execution, conditions and amount of the Grant Aid etc., are confirmed.

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

However, in case of delays in delivery, installation or construction due to unforeseen factors such as weather, 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.

(4) Under the Grant, in principle, products and services of origins of Japan or the recipient country are to be purchased.

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

However the prime contractors, namely, consulting contractor 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.)

(5) Necessity of the "Verification"

The Government of the recipient country or its designated authority will conclude contracts denominated in Japanese yen with Japanese nationals. The Government of Japan shall verify those contracts. The "Verification" is deemed necessary to secure accountability to Japanese tax payers.

(6) 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,
- b) to provide facilities for distribution of electricity, water supply and drainage and other incidental facilities in and around the sites,
- c) to secure buildings prior to the installation work in case the project is providing equipment,
- d) to ensure all the expenses and prompt execution for unloading, customs clearance at the port of disembarkation 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.

(7) 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 the operation and maintenance as well as to bear all expenses deemed necessary other than those covered by the Grant Aid.

(8) Re-export

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

(9) Banking Arrangement (B/A)

a) The Government of the recipient country or its designated authority shall open an account in the name of the Government of the recipient country in a bank in Japan. The Government of Japan will execute the Grant Aid by making payments in Japanese yen to cover the obligations incurred by 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 issued by the Government of the recipient country or its designated authority.

(10) 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.

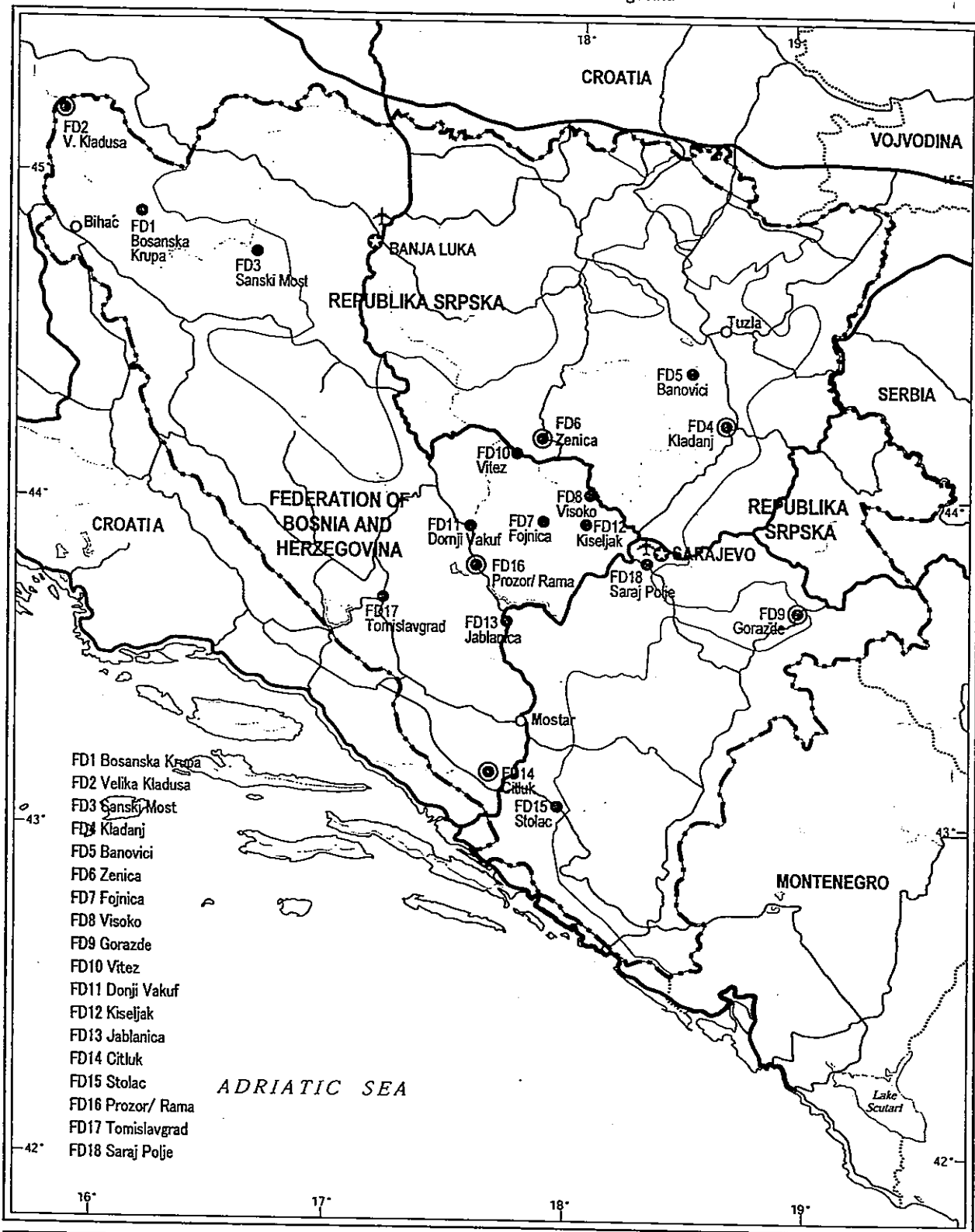


Major Undertakings to be taken by Each Government (Construction)

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 construct the parking lot	●	
5	To construct roads		
	1) Within the site	●	
	2) Outside the site		●
6	To construct the building	●	
7	To provide facilities for the distribution of electricity, water supply, drainage and other incidental facilities		
	1) Electricity		
	a. The distributing line to the site		●
	b. The drop wiring and internal wiring within the site	●	
	c. The main circuit breaker and transformer	●	
	2) Water Supply		
	a. The city water distribution main to the site		●
	b. The supply system within the site (receiving and/or elevated tanks)	●	
	3) Drainage		
	a. The city drainage main (for storm, sewer and others) to the site		●
	b. The drainage system (for toilet sewer, ordinary waste, storm drainage and others) within the site	●	
	4)Telephone System		
	a. The telephone trunk line to the main distribution frame / panel (MDF) of the building		●
	b. The MDF and the extension after the frame / panel	●	
	5)Furniture and Equipment		
	a. General furniture		●
	b. Project furniture and equipment	●	
8	To bear the following commissions to a bank of Japan for the banking		
	1) Advising commission of A/P		●
	2) Payment commission		●
9	To ensure prompt unloading and customs clearance at the port of		
	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	●	

NO	Items	To be covered by Grant Aid	To be covered by Recipient side
10	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		●
11	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		●
12	To maintain and use properly and effectively the facilities constructed and equipment provided under the Grant Aid		●
13	To bear all the expenses deem necessary, other than those to be borne by the Grant Aid, for construction of the facilities as well as for the transportation and installation of the equipment		●

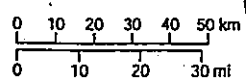
ANNEX6: Site Location Map for Dom Zdravljas in Federation of Bosnia and Herzegovina



- FD1 Bosanska Krupa
- FD2 Velika Kladusa
- FD3 Sanski Most
- FD4 Kladanj
- FD5 Banovici
- FD6 Zenica
- FD7 Fojnica
- FD8 Visoko
- FD9 Gorazde
- FD10 Vitez
- FD11 Donji Vakuf
- FD12 Kiseljak
- FD13 Jablanica
- FD14 Citluk
- FD15 Stolac
- FD16 Prozor/ Rama
- FD17 Tomislavgrad
- FD18 Saraj Polje



	Federation of Bosnia and Herzegovina		Capital
	Republika Srpska		Project site (equipment)
	BRCKO DISTRICT		Project site (equipment+facility)
			International boundary
			Inter-entiy boundary line
			Republic boundary
			Provincial boundary
			Main road
			Secondary road
			Airport



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MINUTES OF DISCUSSIONS
BASIC DESIGN STUDY
ON THE PROJECT FOR IMPROVEMENT OF MEDICAL EQUIPMENT AND FACILITIES
IN PRIMARY HEALTH CARE INSTITUTIONS PHASE III
IN BOSNIA AND HERZEGOVINA

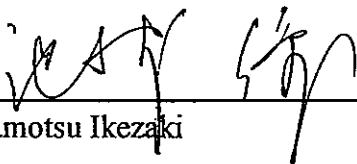
In response to a request from the Government of Bosnia and Herzegovina (hereinafter referred to as "the Government"), the Government of Japan decided to conduct a Basic Design Study on the project for Improvement of Medical Equipment and Facilities in Primary Health Care Institutions Phase III (hereinafter referred to as "the Project") and entrusted the study to the Japan International Cooperation Agency (hereinafter referred to as "JICA").

JICA sent to Bosnia and Herzegovina the Basic Design Study Team (hereinafter referred to as "the Team"), which is headed by Mr. Tamotsu Ikezaki, Director, Second Project Management Division, Grant Aid Management Department, Japan International Cooperation Agency, and is scheduled to stay in the country from 9 February to 11 March.

The Team held discussions with the officials concerned of the Government 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, March 10, 2004



Mr. Tamotsu Ikezaki
Leader
Basic Design Study Team
Japan International Cooperation Agency



Dr. Marin Kvaternik
Minister of Health and Social Welfare
Republic of Srpska



Mr. Mirza Pinjo
Head of the Unit
Department for Multilateral relations,
Ministry of Foreign Affairs,
Bosnia and Herzegovina

ATTACHMENT

1. Objectives of the Project

The objective of the project is to improve the Primary Health Care service in Dom Zdravlja through procurement of medical equipment and/or renovation of the facilities.

2. Project site

After discussions with the team, Dom Zdravlja shown in Annex 1 were requested as the project sites by the Government.

3. Responsible and Implementing Agency

Responsible Ministry: Ministry of Health and Social Welfare

Executing Agency: Department of Health Development

4. Items requested by the Government

After discussions with the Team, following items were finally requested by the Government. JICA will assess the appropriateness of the request and will report the findings to the Government of Japan. Therefore, the both sides agreed that the final components requested by the Government may differ from the below items.

(1) Procurement of the equipment described in Annex 2

(2) Renovation of facilities described in Annex 3

5. Japan's Grant Aid Scheme

5-1 The Government understands the Japan's Grant Aid Scheme explained by the Team, as described in Annex 4.

5-2 The Government will take necessary measures described in Annex 5 for smooth implementation of the Project to be implemented on condition that the Japan's grant aid is extended to the Project.

6. Schedule of the Study

6-1 JICA will prepare the draft report in English and dispatch a mission in order to explain its contents in June 2004.

6-2 In case that the contents of the report is accepted in principle by the Government, JICA will complete the final report and send it to the Government around September 2004.

7. Other relevant issues

- 7-1 Both sides agreed that "Computer" would not be included in the requested item of the project.
- 7-2 The Government agreed to bear the appropriate budget for getting radiology protection in the project site that needs adaptation of X-ray diagnosis room.
- 7-3 The Government will allocate the necessary budget and personnel for the Project for securing sustainable and proper operation and maintenance of the equipment included in the Project.

Annex 1: Requested Project Sites

Annex 2: Requested Equipment List

Annex 3: Requested Sites for Renovation of Facilities

Annex 4: Japan's Grant Aid Scheme

Annex 5: Major Undertakings to be taken by Each Government

Annex 6: Site Location Map



Annex 1 Requested Project Sites

Site Code	Name of DZ
RS1	Banja Luka
RS2	Srbac
RS3	Prijedor
RS4	Bijeljina
RS5	Zvornik
RS6	Prnjavor
RS7	Srebrenica
RS8	Knezevo
RS9	Srpski Brod
RS10	Samac
RS11	Rogatica
RS12	Vlasenica



Annex 2 Requested Equipment List

Site code		RS1	RS2	RS3	RS4	RS5	RS6	RS7	RS8	RS9	RS10	RS11	RS12
Equipment/Project site		Banja Luka	Srbac	Prijedor	Bijeljina	Zvornik	Prnjavor	Srebrenica	Knezevo	Srpski Brod	Samac	Rogatica	Vlasenica
1	RTG apparatus	3	1	1	1	2	1	1	1	1	1	1	1
2	Film X-ray development machine	2	1	1	1	2	1		1	1	1	1	1
3	Ultrasound	3	1	1	2	1	1	1	1	2	1	1	1
4	Spirometer	2	1			1	1			1			
5	ECG	2	3	3	5	6	1	2	2		4	1	3
6	Biochemistry analyzer	2	1	1	1	1	1		1	1	1		
7	Spectrophotometer	1	1	2	2	4	2	1	1	1	1		2
8	Blood cell counter	2	1	2	2	2	2		1	1	1	1	2
9	Microscope	3	3	3	3	2	3	2	2	2	3	1	2
10	Centrifuge	2	2	3	3	2	2		3	1	2		3
11	Sterifiser	5	3	3	5	2		3	5	4	4		3
12	Balance	2	1	2			1	1	1	1	1		1
13	Destilator	2	1	1	2	2	1		1	1	1	1	1
14	Washing machine for lab. glassware	1	1		1	1			1				1
15	Ambulance vehicle	2	1	2	4	2	1	2	1	1	1	2	1
16	Defibrillator	4	2	2	2	1	1	1	1	2	2		1
17	Reanimation set	5	2	2	3	2	2	1	1	2	5	1	5
18	Laryngoscope	5	2	2	4	3	1		1	2	3		3
19	Aspirator	2	2	2	2	2	2		1	6	2	1	3

Annex 3 Requested Sites for Renovation of Facilities

Site Code	Name of DZ
RS1	Banja Luka
RS2	Srbac
RS3	Prijedor
RS4	Bijeljina
RS5	Zvornik
RS6	Prnjavor
RS8	Knezevo
RS9	Srpski Brod
RS10	Samac
Total	9 sites

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Japan's Grant Aid Program

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(1) The Japan's Grant Aid Program is executed by the following procedures.

Application	(request made by a recipient country)
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Appraisal & Approval	(appraisal by the Government of Japan and approval by the Cabinet of Japan)
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2. Contents of the Study

(1) Contents of the Study

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b) evaluation of the appropriateness of the project for the Grant Aid Scheme from a technical, social and economical point of view,

c) confirmation of items agreed on by the both parties concerning a basic concept of the project,

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Both Governments concerned extend Japan's Grant Aid in accordance with the Exchange of Notes in which the objectives of the Project, period of execution, conditions and amount of the Grant Aid etc., are confirmed.

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

However, in case of delays in delivery, installation or construction due to unforeseen factors such as weather, 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.

(4) Under the Grant, in principle, products and services of origins of Japan or the recipient country are to be purchased.

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

However the prime contractors, namely, consulting, contractor 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.)

(5) Necessity of the "Verification"

The Government of the recipient country or its designated authority will conclude contracts denominated in Japanese yen with Japanese nationals. The Government of Japan shall verify those contracts. The "Verification" is deemed necessary to secure accountability to Japanese tax payers.

(6) 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,
- b) to provide facilities for distribution of electricity, water supply and drainage and other incidental facilities in and around the sites,
- c) to secure buildings prior to the installation work in case the project is providing equipment,
- d) to ensure all the expenses and prompt execution for unloading, customs clearance at the port of disembarkation 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.

(7) 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 the operation and maintenance as well as to bear all expenses deemed necessary other than those covered by the Grant Aid.

(8) Re-export

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

(9) Banking Arrangement (B/A)

a) The Government of the recipient country or its designated authority shall open an account in the name of the Government of the recipient country in a bank in Japan. The Government of Japan will execute the Grant Aid by making payments in Japanese yen to cover the obligations incurred by 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 issued by the Government of the recipient country or its designated authority.

(10) 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.

Major Undertakings to be taken by Each Government (Construction)

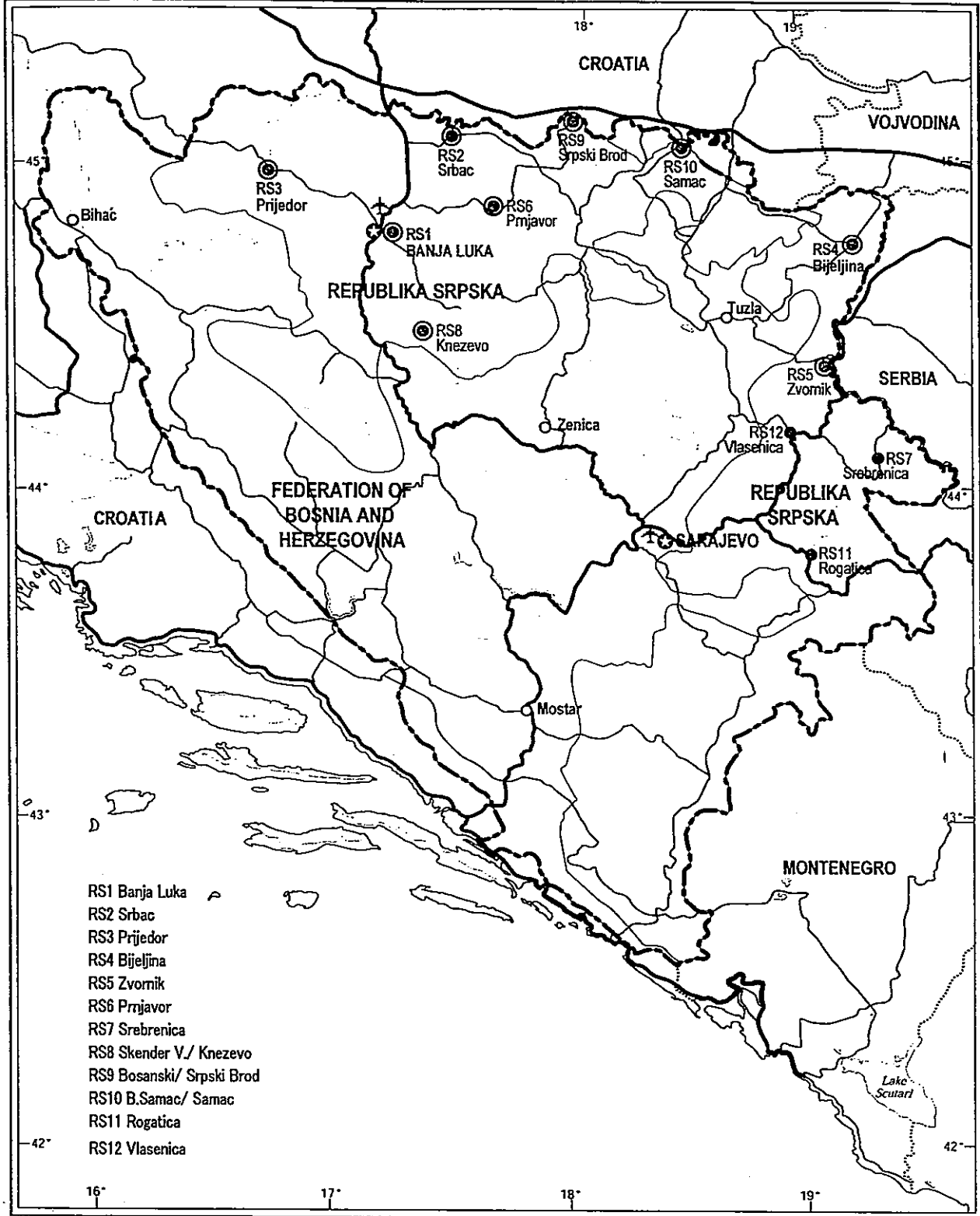
NO	Items	To be covered by Grant Aid	To be covered by Recipient side
1	To secure land		●
2	To clear, level and reclaim the site when needed		●
3	To construct gates and fences in and around the site		●
4	To construct the parking lot	●	
5	To construct roads		
1)	Within the site	●	
2)	Outside the site		●
6	To construct the building	●	
7	To provide facilities for the distribution of electricity, water supply, drainage and other incidental facilities		
1)	Electricity		
a.	The distributing line to the site		●
b.	The drop wiring and internal wiring within the site	●	
c.	The main circuit breaker and transformer	●	
2)	Water Supply		
a.	The city water distribution main to the site		●
b.	The supply system within the site (receiving and/or elevated tanks)	●	
3)	Drainage		
a.	The city drainage main (for storm, sewer and others) to the site		●
b.	The drainage system (for toilet sewer, ordinary waste, storm drainage and others) within the site	●	
4)	Telephone System		
a.	The telephone trunk line to the main distribution frame / panel (MDF) of the building		●
b.	The MDF and the extension after the frame / panel	●	
5)	Furniture and Equipment		
a.	General furniture		●
b.	Project furniture and equipment	●	
8	To bear the following commissions to a bank of Japan for the banking		
1)	Advising commission of A/P		●
2)	Payment commission		●
9	To ensure prompt unloading and customs clearance at the port of		
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	●	

NO	Items	To be covered by Grant Aid	To be covered by Recipient side
10	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		●
11	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		●
12	To maintain and use properly and effectively the facilities constructed and equipment provided under the Grant Aid		●
13	To bear all the expenses deem necessary, other than those to be borne by the Grant Aid, for construction of the facilities as well as for the transportation and installation of the equipment		●

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





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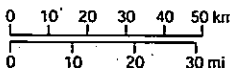
ANNEX6: Site Location Map for Dom Zdravljas in Replibc of Sprska



- RS1 Banja Luka
- RS2 Srbac
- RS3 Prijedor
- RS4 Bijeljina
- RS5 Zvornik
- RS6 Prnjavor
- RS7 Srebrenica
- RS8 Skender V./ Knezevo
- RS9 Bosanski/ Srpski Brod
- RS10 B.Samac/ Samac
- RS11 Rogatica
- RS12 Vlasenica



	Federation of Bosnia and Herzegovina		Capital
	Republika Srpska		Project site (equipment+facility)
	BRCKO DISTRICT		International boundary
			Inter-entitiy boundary line
			Republic boundary
			Provincial boundary
			Main road
			Secondary road
			Airport



0 10 20 30 40 50 km
0 10 20 30 mi

MINUTES OF DISCUSSIONS
BASIC DESIGN STUDY
ON THE PROJECT FOR IMPROVEMENT OF MEDICAL EQUIPMENT AND FACILITIES
IN PRIMARY HEALTH CARE INSTITUTIONS PHASE III
IN BOSNIA AND HERZEGOVINA

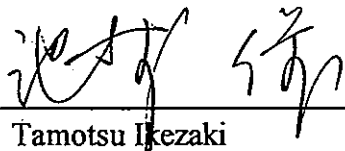
In response to a request from the Government of Bosnia and Herzegovina (hereinafter referred to as "the Government"), the Government of Japan decided to conduct a Basic Design Study on the project for Improvement of Medical Equipment and Facilities in Primary Health Care Institutions Phase III (hereinafter referred to as "the Project") and entrusted the study to the Japan International Cooperation Agency (hereinafter referred to as "JICA").

JICA sent to Bosnia and Herzegovina the Basic Design Study Team (hereinafter referred to as "the Team"), which is headed by Mr. Tamotsu Ikezaki, Director, Second Project Management Division, Grant Aid Management Department, Japan International Cooperation Agency, and is scheduled to stay in the country from 9 February to 11 March.

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

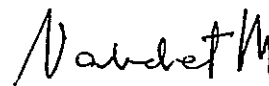
In the course of discussions and field survey, both parties confirmed the main items described on the attached sheets. The Team will proceed to further works and prepare the Basic Design Study Report.

Sarajevo, March 10, 2004



Mr. Tamotsu Ikezaki
Leader
Basic Design Study Team
Japan International Cooperation Agency

for



Dr. Anto Domic
Chief
Department of Health, Public Safety and
Services to Citizens
Brcko District Bosnia and Herzegovina



Mr. Mirza Pinjo
Head of the Unit
Department for Multilateral relations,
Ministry of Foreign Affairs,
Bosnia and Herzegovina

ATTACHMENT

1. Objectives of the Project

The objective of the project is to improve the Primary Health Care service in Dom Zdravlja through procurement of medical equipment and/or renovation of the facilities.

2. Project site

After discussions with the team, Dom Zdravlja shown in Annex 1 were requested as the project sites by the Government.

3. Responsible and Implementing Agency

Responsible Ministry: Department of Health Public Safety and Services to Citizens

Executing Agency: Sub Department of Primary Health Service

4. Items requested by the Government

After discussions with the Team, following items were finally requested by the Government. JICA will assess the appropriateness of the request and will report the findings to the Government of Japan. Therefore, the both sides agreed that the final components requested by the Government may differ from the below items.

(1) Procurement of the equipment described in Annex 2

(2) Renovation of facilities described in Annex 3

5. Japan's Grant Aid Scheme

5-1 The Government understands the Japan's Grant Aid Scheme explained by the Team, as described in Annex 4.

5-2 The Government will take necessary measures described in Annex 5 for smooth implementation of the Project to be implemented on condition that the Japan's grant aid is extended to the Project.

6. Schedule of the Study

6-1 JICA will prepare the draft report in English and dispatch a mission in order to explain its contents in June 2004.

6-2 In case that the contents of the report is accepted in principle by the Government, JICA will complete the final report and send it to the Government around September 2004.

7. Other relevant issues

7-1 Both sides agreed that "Computer" would not be included in the requested item of the project.

7-2 The Government agreed to bear the appropriate budget for getting radiology protection in the project site that needs adaptation of X-ray diagnosis room.

7-3 The Government will allocate the necessary budget and personnel for the Project for securing sustainable and proper operation and maintenance of the equipment included in the Project.

Annex 1: Requested Project Sites

Annex 2: Requested Equipment List

Annex 3: Requested Sites for Renovation of Facilities

Annex 4: Japan's Grant Aid Scheme

Annex 5: Major Undertakings to be taken by Each Government

Annex 6: Site Location Map

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Annex 1 Requested Project Sites

Site Code	Name of DZ
BR1	Brcko
BR2	Maoca
BR3	Bijela
Total	3 sites

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Annex 2 Requested Equipment List

Site code		BR1	BR2	BR3
Equipment/Project site		Brcko	Macao	Bijela
1	RTG apparatus	1	1	
2	Film X-ray development machine	1	1	1
3	Ultrasound	3	1	1
4	Spirometer		1	1
5	ECG	8	5	5
6	Biochemistry analyzer	1		
7	Spectrophotometer	1	1	1
8	Blood cell counter	1		
9	Microscope	2	1	1
10	Centrifuge	2	1	1
11	Steriliser	1	1	
12	Balance	1		
13	Destilator	1		
14	Washing machine for lab. glassware	1		
15	Ambulance vehicle	3	1	1
16	Reanimation set	3	1	1
17	Laryngoscope	1		

Annex 3 Requested Sites for Renovation of Facilities

Site Code	Name of DZ
BR1	Brcko
BR2	Maoca
Total	2 sites



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Japan's Grant Aid Program

1. Japan's Grant Aid Procedures

(1) The Japan's Grant Aid Program is executed by 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 the Cabinet of Japan)
Determination of Implementation	(Exchange of Notes between both Governments)
Implementation	(implementation of the Project)

(2) Firstly, an application or a request for a Grant Aid project submitted by the recipient country is examined by the Government of Japan (the Ministry of Foreign Affairs) to determine whether or not it is eligible for Japan's Grant Aid. If the request is deemed appropriate, the Government of Japan assigns JICA 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 Program, based on the Basic Design Study Report prepared by JICA and the results are then submitted to the cabinet for approval.

Fourthly, the project approved by the cabinet becomes official with the Exchange of Notes signed by the Government of Japan and the recipient country.

Finally, for the implementation of the Project, JICA assists the recipient country in preparing contracts and so on.

2. Contents of the Study

(1) Contents of the Study

The purpose of the Basic Design Study conducted by JICA on a requested project is to provide a basic document necessary for appraisal of the project by the Japanese Government. The contents of the Study are as follows:

a) confirmation of the background, objectives, benefits of the project and also institutional capacity of agencies concerned of the recipient country necessary for project implementation,

b) evaluation of the appropriateness of the project for the Grant Aid Scheme from a technical, social and economical point of view,

c) confirmation of items agreed on by the both parties concerning a basic concept of the project,

- d) preparation of a basic design of the project,
- e) 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.

Final project components are subject to approval by the Government of Japan and therefore may differ from an original request. Implementing the project, the Government of Japan requests the recipient country to take necessary measures involved which are itemized on Exchange of Notes.

(2) Selection of Consultants

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

The consulting firm(s) used for the study is (are) recommended by JICA to a recipient country after Exchange of Notes, in order to maintain technical consistency and also to avoid any undue delay in implementation should the selection process be repeated.

3. Japan's Grant Aid Scheme

(1) What is Grant Aid?

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

(2) Exchange of Notes (E/N)

Both Governments concerned extend Japan's Grant Aid in accordance with the Exchange of Notes in which the objectives of the Project, period of execution, conditions and amount of the Grant Aid etc., are confirmed.

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

However, in case of delays in delivery, installation or construction due to unforeseen factors such as weather, 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.

(4) Under the Grant, in principle, products and services of origins of Japan or the recipient country are to be purchased.

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

However the prime contractors, namely, consulting contractor 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.)

(5) Necessity of the "Verification"

The Government of the recipient country or its designated authority will conclude contracts denominated in Japanese yen with Japanese nationals. The Government of Japan shall verify those contracts. The "Verification" is deemed necessary to secure accountability to Japanese tax payers.

(6) 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,
- b) to provide facilities for distribution of electricity, water supply and drainage and other incidental facilities in and around the sites,
- c) to secure buildings prior to the installation work in case the project is providing equipment,
- d) to ensure all the expenses and prompt execution for unloading, customs clearance at the port of disembarkation 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.

(7) 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 the operation and maintenance as well as to bear all expenses deemed necessary other than those covered by the Grant Aid.

(8) Re-export

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

(9) Banking Arrangement (B/A)

a) The Government of the recipient country or its designated authority shall open an account in the name of the Government of the recipient country in a bank in Japan. The Government of Japan will execute the Grant Aid by making payments in Japanese yen to cover the obligations incurred by 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 issued by the Government of the recipient country or its designated authority.

(10) 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.

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Major Undertakings to be taken by Each Government (Construction)

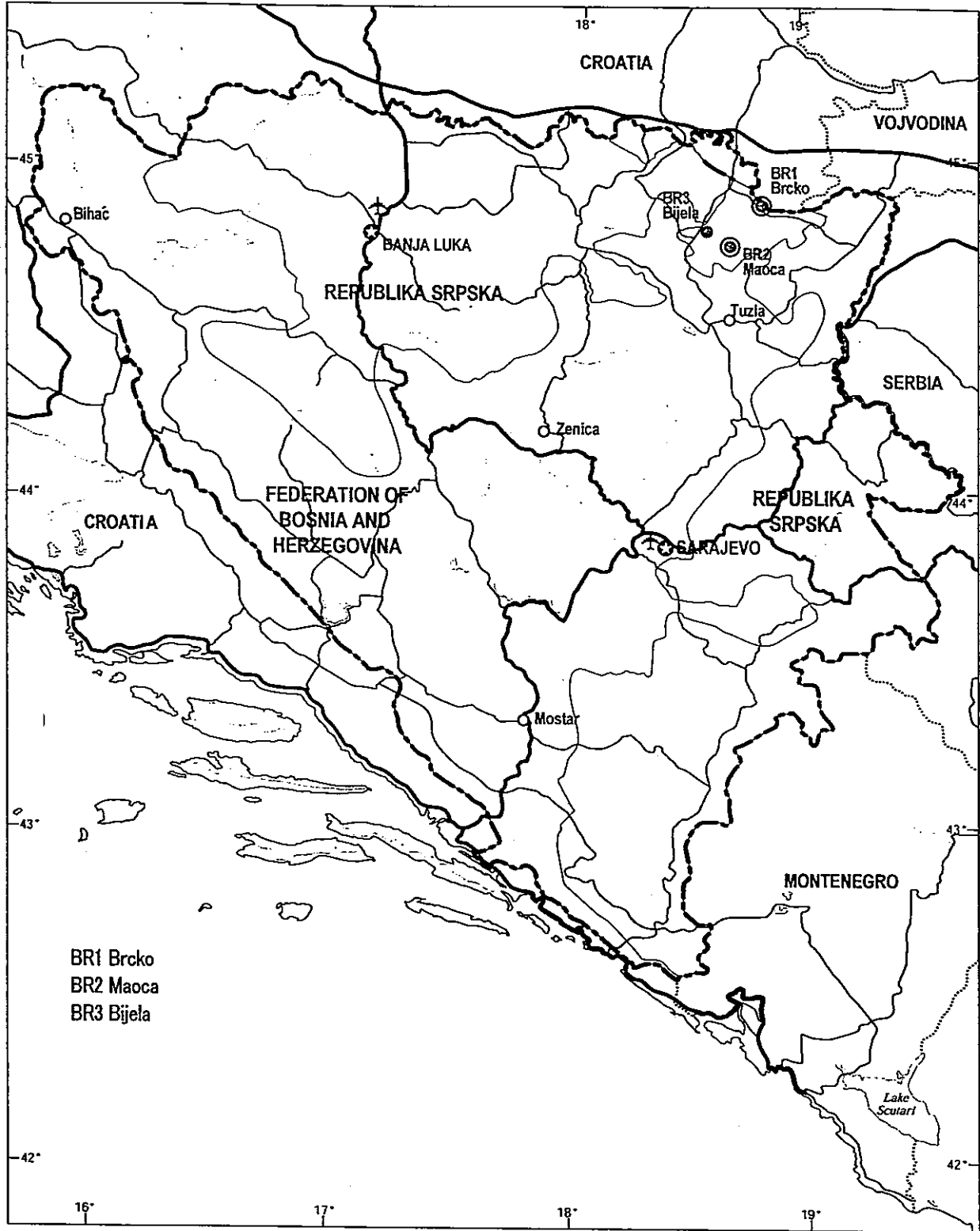
NO	Items	To be covered by Grant Aid	To be covered by Recipient side
1	To secure land		●
2	To clear, level and reclaim the site when needed		●
3	To construct gates and fences in and around the site		●
4	To construct the parking lot	●	
5	To construct roads		
	1) Within the site	●	
	2) Outside the site		●
6	To construct the building	●	
7	To provide facilities for the distribution of electricity, water supply, drainage and other incidental facilities		
	1) Electricity		
	a. The distributing line to the site		●
	b. The drop wiring and internal wiring within the site	●	
	c. The main circuit breaker and transformer	●	
	2) Water Supply		
	a. The city water distribution main to the site		●
	b. The supply system within the site (receiving and/or elevated tanks)	●	
	3) Drainage		
	a. The city drainage main (for storm, sewer and others) to the site		●
	b. The drainage system (for toilet sewer, ordinary waste, storm drainage and others) within the site	●	
	4) Telephone System		
	a. The telephone trunk line to the main distribution frame / panel (MDF) of the building		●
	b. The MDF and the extension after the frame / panel	●	
	5) Furniture and Equipment		
	a. General furniture		●
	b. Project furniture and equipment	●	
8	To bear the following commissions to a bank of Japan for the banking		
	1) Advising commission of A/P		●
	2) Payment commission		●
9	To ensure prompt unloading and customs clearance at the port of		
	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	●	

NO	Items	To be covered by Grant Aid	To be covered by Recipient side
10	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		●
11	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		●
12	To maintain and use properly and effectively the facilities constructed and equipment provided under the Grant Aid		●
13	To bear all the expenses deem necessary, other than those to be borne by the Grant Aid, for construction of the facilities as well as for the transportation and installation of the equipment		●

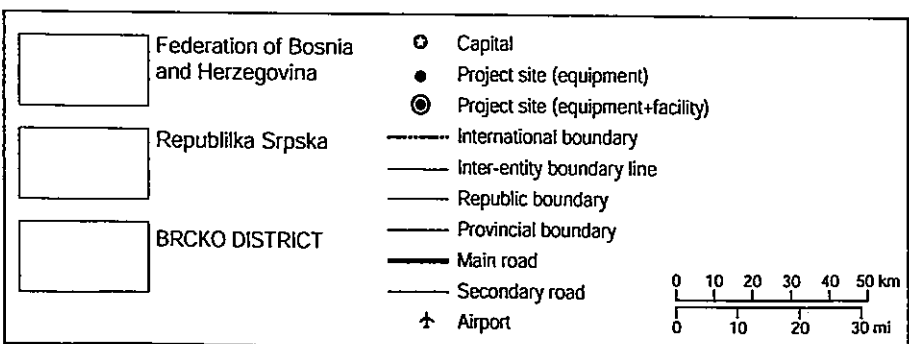
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ANNEX6: Site Location Map for Dom Zdravljias in Brcko District



BR1 Brcko
BR2 Maoca
BR3 Bijela



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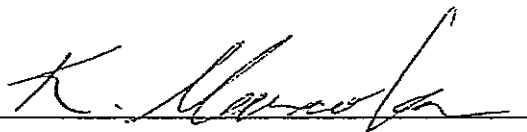
MINUTES OF DISCUSSIONS
ON
THE BASIC DESIGN STUDY ON THE PROJECT FOR
IMPROVEMENT OF MEDICAL EQUIPMENT AND FACILITIES IN PRIMARY
HEALTH CARE INSTITUTIONS PHASE III
IN
BOSNIA AND HERZEGOVINA
(EXPLANATION ON DRAFT REPORT)

In February 2004, the Japan International Cooperation Agency (hereinafter referred to as "JICA") dispatched the Basic Design Study Team on the Project for Improvement of Medical Equipment and facilities in Primary Health Care Institutions Phase III (hereinafter referred to as "the Project"), and through discussion, field survey and technical examination of the results in Japan, JICA prepared draft report of the Study.

In order to explain and to consult the Bosnia and Herzegovina side on the components of the draft report, JICA sent to Bosnia and Herzegovina the Draft Report Explanation team, which is headed by Mr. Keiichi MURAOKA, Resident Representatives, Austria Office, JICA, from 28 June to 14 July, 2004.

As a result of discussions, both parties confirmed the main items described on the attached sheets.

Sarajevo, 8 July, 2004

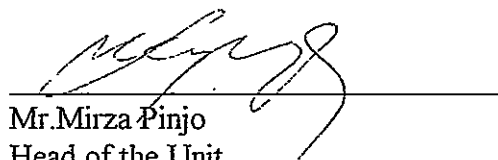


Mr. Keiichi Muraoka
Leader
Draft Explanation Study Team
Japan International Cooperation Agency



Mr. Tomo Lucic
Minister of Health
Federation of Bosnia and Herzegovina

Witness



Mr. Mirza Pinjo
Head of the Unit
Department for Multilateral relations,
Ministry of Foreign Affairs,
Bosnia and Herzegovina

ATTACHMENT

1. Components of the Draft Report

The Bosnia and Herzegovina side agreed and accepted in principle the components of the draft report explained by the Team. The requested items described in Annex-1 shall be re-examined and referred to on finalizing the Basic Design Study Report.

2. Japan's Grant Aid Scheme

The Bosnia and Herzegovina side understands the Japan's Grant Aid Scheme as explained by the Team and described in Annex-4 of the Minutes of Discussions of the Basic Design Study signed by both parties March 10, 2004. And the Bosnia and Herzegovina side will take the necessary measures, described in Annex-2, to be taken by each government for smooth implementation of the Project to be implemented on condition that the Japan's grant aid is extended to the Project.

3. Schedule of the Study

JICA will complete the final report in accordance with the confirmed item and send it to Bosnia and Herzegovina side by September, 2004.

4. Other Relevant Issues

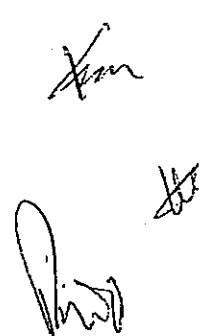
- 4-1. The Ministry of Health understands that the project will be implemented in two phases and understands its process (especially the process that tender will be implemented at each phases in accordance with "the Guidelines of the Japanese Grant Aid for General Projects and for Fisheries")
- 4-2. The Ministry of Health have already allocated necessary budget for securing the construction of X-ray diagnostic block in FD02 Velika Kladusa in order to complete physical works in the project site prior to installation of the equipment.
- 4-3. Cantonal government will secure to allocate licensed X-ray technician for FD 09 Gražde prior to installation of RTG apparatus.
- 4-4. The Ministry of Health is responsible to provide allocation of the enough budget and personal staff for the operation and maintenance of the equipments provided by the Project.
- 4-5. Each Dom Zdravlja in coordination with the cantonal government will complete the renovation work of facilities shown as Annex-3 prior to installation of RTG apparatus.
- 4-6. The Ministry of Health is responsible for obtaining the permits, licenses and the other authorizations needed for the implementation of the Project (including the permit for use of X-ray room), as well as the fees involved in the issuance of such authorizations.

4-7. Both parties confirmed that target facilities of the Project would not be integrated and/or privatized in the future.

Annex-1: Equipment list

Annex-2: Major undertakings to be taken by each government

Annex-3: Renovation work on radiology department to be undertaken by the recipient side

Handwritten signatures and initials in the bottom right corner of the page. There are three distinct marks: a signature that appears to be 'Xian', a large signature that appears to be 'Pinto', and a smaller set of initials to the right of the 'Pinto' signature.

Annex-1: Equipment list

No.	Equipment/Project site	FD01	FD02	FD03	FD04	FD05	FD06	FD07	FD08	FD09	FD10	FD11	FD12	FD13	FD14	FD15	FD16	FD17	FD18	Total
		Bosnska Krupa	Velika Kladusa	Sanski Most	Kladanj	Barovici	Zenica	Fojnica	Visoko	Gorazde	Vitez	Donji Vakuf	Kiseljak	Jablanica	Citluk	Stolac	Prozor/Rama	Tomislav Grad	Saraj Polje	
1-A	RTG apparatus (A)	1		1	1		1								1		1	1		7
1-B	RTG apparatus (B)											1	1							2
1-C	RTG apparatus (C)		1						1											2
1-D	RTG apparatus (D)							1		1				1		1			1	5
1-E	Protection door (A)		1		1		1			1		1	1				1			7
1-F	Protection door (B)		1		1		1			1					1					5
1-G	Monitor Window (A)									1			1					1		3
1-H	Monitor Window (B)	1	1	1	1		1					1			1		1			8
2	Film X-ray development machine	1	1	1	1	1	1	1		1		1	1	1	1	1	1	1	1	16
3	Ultrasound	1	1	1	1	1	1	1		1	1	1	1	1	1	1	1	1	1	17
4	Spirometer	1	1	1	1	1	1	1		1	1	1	1	1	1	1	1	1	1	16
5	ECG	1	1	1	1	1	1	1	1	1	1	1	1	1		1		1		15
6	Biochemistry analyzer	1	1	1						1								1		5
7	Spectrophotometer			1		1		1			1	1	1	1	1	1	1	1	1	12
8	Blood cell counter			1			1	1	1	1		1		1	1	1	1	1		11
9	Microscope	2	1		1	1		1		1			1		1	1		1		11
10	Centrifuge	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	18
11	Sterilizer	1	1	1	1	1	1	1		1	1		1	1	1	1	1	1	1	16
12	Balance	1	1	1	1	1	1	1		1	1	1			1	1	1	1	1	15
13	Destilator	1	1	1	1	1	1	1		1	1	1	1	1	1	1	1	1	1	17
14	Washing machine for lab. Glassware	1	1	1			1			1								1		6
15	Ambulance vehicle	1	1	1	1			1	1	1	1	1	1	1	1	1	1	1	1	16
16	Defibrillator	1		1	1	1		1		1	1	1	1	1	1	1	1	1	1	15
17	Reanimation set	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	18
18	Laryngoscope	1	1		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	17
19	Aspirator	1	1	1	1	1	1	1	1	1	1	1	1		1	1	1	1	1	17

Kan

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Pinto

Annex-2: Major undertakings to be taken by each government

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

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etc
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Annex-3: Renovation work on radiology department to be undertaken by the recipient side

NO.	Name	Recipient Country's Works										
		(* Category of renovation)	Removal of furniture, equipment fittings, and clearing space	Removal of existing X-ray apparatus	Providing openings on the walls for installing doors/windows	Removal of existing walls, doors, windows	Construction of new partitions	Installation of general doors(not X-ray proof)	Replacement of electrical cables/tubes and utility pipes	Installation of ventilation fan and lighting fixtures	Power Supply (include replace existing power)	X-ray proof works on exist. Walls/windows etc.
			①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩
FD1	Bosanska Krupa	C	⊙	⊙	⊙	-	-	-	-	-	-	-
FD2	Velika Kladusa	A(Extention)	⊙	-	⊙	⊙	⊙	⊙	⊙	⊙	⊙	-
FD3	Sanski Most	B	⊙	⊙	⊙	⊙	-	-	⊙	-	-	-
FD4	Kladanj	B	⊙	⊙	⊙	⊙	⊙	⊙	⊙	-	⊙	-
FD5	Banovici		-	-	-	-	-	-	-	-	-	-
FD6	Zenica	C	⊙	⊙	⊙	⊙	-	-	-	-	⊙	-
FD7	Fojnica	-	⊙	⊙	-	-	-	-	-	-	-	-
FD8	Visoko	-	⊙	⊙	-	-	-	-	-	-	-	-
FD9	Gorazde	A	⊙	-	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙
FD10	Vitez	-	-	-	-	-	-	-	-	-	-	-
FD11	Donji Vakuf	C	⊙	⊙	⊙	-	-	⊙	-	-	-	-
FD12	Kiseljak	C	⊙	-	⊙	-	-	-	-	-	⊙	-
FD13	Jablanica	-	⊙	⊙	-	⊙	⊙	-	-	-	-	-
FD14	Citluk	B	⊙	⊙	⊙	⊙	-	⊙	⊙	-	⊙	⊙
FD15	Stolac	-	⊙	⊙	-	-	-	-	-	-	-	-
FD16	Prozor/ Rama	B	⊙	⊙	-	⊙	⊙	-	⊙	-	⊙	-
FD17	Tomislavgrad	C	⊙	⊙	⊙	-	-	-	-	-	⊙	-
FD18	Saraj Polje	-	⊙	⊙	-	-	-	-	-	-	-	-
TOTAL		-	16	13	10	8	5	5	6	2	8	2

(*1) A:New plan with replacement of radiology, B:Renovation of existing X-ray room, C:No variation but install windows/doors
 ⊙ denotes the required work to be conducted by Bosnia and Herzegovina side prior to installation of X-ray apparatus (Identified at the target site during the basic design study survey in February 2004)

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MINUTES OF DISCUSSIONS
ON
THE BASIC DESIGN STUDY ON THE PROJECT FOR
IMPROVEMENT OF MEDICAL EQUIPMENT AND FACILITIES IN PRIMARY
HEALTH CARE INSTITUTIONS PHASE III
IN
BOSNIA AND HERZEGOVINA
(EXPLANATION ON DRAFT REPORT)

In February 2004, the Japan International Cooperation Agency (hereinafter referred to as "JICA") dispatched the Basic Design Study Team on the Project for Improvement of Medical Equipment and facilities in Primary Health Care Institutions Phase III (hereinafter referred to as "the Project"), and through discussion, field survey and technical examination of the results in Japan, JICA prepared draft report of the Study.

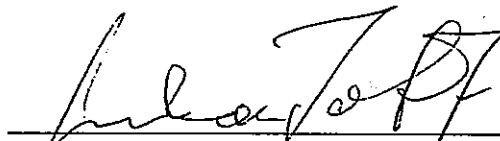
In order to explain and to consult the Bosnia and Herzegovina side on the components of the draft report, JICA sent to Bosnia and Herzegovina the Draft Report Explanation Team (hereinafter referred to as "the Team"), which is headed by Mr. Keiichi MURAOKA, Resident Representative, Austria Office, JICA, from 28 June to 14 July, 2004.

As a result of discussions, both parties confirmed the main items described on the attached sheets.

Sarajevo, 8 July, 2004

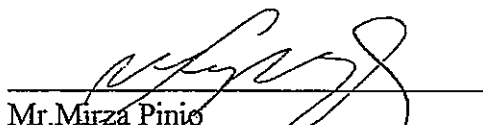


Mr. Keiichi Muraoka
Leader
Draft Explanation Study Team
Japan International Cooperation Agency



Dr. Marin Kvaternik
Minister of Health and Social Welfare
Republic of Srpska

Witness



Mr. Mirza Pinjo
Head of the Unit
Department for Multilateral relations,
Ministry of Foreign Affairs,
Bosnia and Herzegovina

ATTACHMENT

1. Components of the Draft Report

The Bosnia and Herzegovina side agreed and accepted in principle the components of the draft report explained by the Team. The requested items described in Annex-1 shall be re-examined and referred to on finalizing the Basic Design Study Report.

2. Japan's Grant Aid Scheme

The Bosnia and Herzegovina side understands the Japan's Grant Aid Scheme as explained by the Team and described in Annex-4 of the Minutes of Discussions of the Basic Design Study signed by both parties March 10, 2004. And the Bosnia and Herzegovina side will take the necessary measures, described in Annex-2, to be taken by each government for smooth implementation of the Project to be implemented on condition that the Japan's grant aid is extended to the Project.

3. Schedule of the Study

JICA will complete the final report in accordance with the confirmed item and send it to the Bosnia and Herzegovina side by September, 2004.

4. Other Relevant Issues

- 4-1. The Ministry of Health and Social Welfare understands that the project will be implemented in two phases and understands its process (especially the process that tender will be implemented at each phases in accordance with "the Guidelines of the Japanese Grant Aid for General Projects and for Fisheries")
- 4-2. The Ministry of Health and Social Welfare is responsible for allocating the enough budget and personal staff for the operation and maintenance of the equipment provided by the Project.
- 4-3. The Ministry of Health and Social Welfare will complete the renovation work of facilities shown as Annex-3 prior to installation of RTG apparatus.
- 4-4. The Ministry of Health and Social Welfare will be responsible for obtaining the permits, licenses and the other authorizations needed for the implementation of the Project (including the permit for the use of X-ray room), as well as the fees involved in the issuance of such authorizations.
- 4-5. Both parties confirmed that target facilities of the Project would not be integrated and/or privatized in the future.

Annex-1: Equipment list

Annex-2: Major undertakings to be taken by each government

Annex-3: Renovation work on radiology department to be undertaking by the recipient side

Annex-1: Equipment list

Equipment/site		RS01	RS02	RS03	RS04	RS05	RS06	RS07	RS08	RS09	RS10	RS11	RS12	Total
		Banja Luka	Srbac	Prijedor	Bijeljina	Zvornik	Prijavor	Srebrenica	Knezevo	Srpski Brod	Samac	Rogatica	Vlasenica	
1-A	RTG apparatus (A)		1				1		1	1	1			5
1-B	RTG apparatus (B)	1		1		1								3
1-C	RTG apparatus (C)				1									1
1-D	RTG apparatus (D)							1				1	1	3
1-E	Protection door(600)	3				1	2		1	1				8
1-F	Protection door(900)	2				3	1		1	1				8
1-G	Window (600)	1		1		1	1							4
1-H	Window (800)	1	1	1	1	1	1		1	1	1			9
2	Film X-ray development machine	1	1	1		1	1		1	1	1	1		9
3	Ultrasound	1	1	1	1	1	1		1	1	1	1	1	11
4	Spirometer	1	1			1	1			1				5
5	ECG	1	1	1	1	1	1	1	1		1	1	1	11
6	Biochemistry analyzer	1			1	1	1							4
7	Spectrophotometer		1			1	1		1	1				5
8	Blood cell counter	1	1	1	1	1	1		1	1	1	1	1	11
9	Microscope	1		1	1	1	1		1	1	1	1	1	10
10	Centrifuge	1	1	1	1	1	1		1	1	1		1	10
11	Sterilizer	1	1	1	1	1		1	1		1		1	9
12	Balance	1	1	1			1	1	1	1	1		1	9
13	Destilator	1	1	1	1	1	1		1	1	1	1	1	11
14	Washing machine for lab. Glassware	1			1	1								3
15	Ambulance vehicle			1	1	1	1	1	1	1	1	1	1	10
16	Defibrillator		1	1	1	1	1	1	1	1	1		1	10
17	Reanimation set	1	1	1	1	1	1	1	1	1	1	1	1	12
18	Laryngoscope	1	1	1	1	1	1		1	1	1		1	10
19	Aspirator	1	1	1	1	1	1		1	1	1	1	1	11

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Annex-2: Major undertakings to be taken by each government

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

Annex-3: Renovation work on radiology department to be undertaken by the recipient side

NO.	Name	(*1) Category of renovation	Recipient Country's Works									
			① Removal of furniture, equipment fittings, and clearing space	② Removal of existing X-ray apparatus	③ Providing openings on the walls for installing doors/windows	④ Removal of existing walls, doors, windows	⑤ Construction of new partitions	⑥ Installation of general doors(not X-ray proof)	⑦ Replacement of electrical cables/tubes and utility pipes	⑧ Installation of ventilation fan and lighting fixtures	⑨ Power Supply (Include replace existing power)	⑩ X-ray proof works on exist. Walls/windows etc.
RS1	Banja Luka	A	⊙	-	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙
RS2	Srbac	C	⊙	⊙	⊙	-	-	-	-	-	⊙	-
RS3	Prijedor	B	⊙	⊙	⊙	⊙	⊙	⊙	⊙	-	-	-
RS4	Bijeljina	B	⊙	⊙	⊙	⊙	-	-	⊙	-	-	-
RS5	Zvornik	A	⊙	-	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙
RS6	Prnjavor	A	⊙	-	⊙	⊙	-	-	⊙	⊙	⊙	⊙
RS7	Srebrenica	-	⊙	⊙	-	-	-	-	-	-	-	-
RS8	Knezevo	B	⊙	⊙	-	⊙	⊙	⊙	⊙	-	⊙	⊙
RS9	Srpski Brod	A	⊙	-	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙
RS10	Samac	C	⊙	⊙	⊙	-	-	-	-	-	-	-
RS11	Rogatica	-	⊙	⊙	-	-	-	-	-	-	-	-
RS12	Vlasenica	-	⊙	⊙	-	-	-	-	-	-	-	-
TOTAL		-	12	8	8	7	5	5	7	4	6	5

(*1) A: New plan with replacement of radiology, B: Renovation of existing X-ray room, C: No variation but install windows/doors.
 ⊙ denotes the required work to be conducted by Bosnia and Herzegovina side prior to installation of X-ray apparatus (Identified at the target site during the basic design study survey in February 2004)

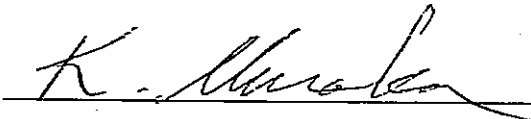
MINUTES OF DISCUSSIONS
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In order to explain and to consult the Bosnia and Herzegovina side on the components of the draft report, JICA sent to Bosnia and Herzegovina the Draft Report Explanation Team (hereinafter referred to as "the Team"), which is headed by Mr. Keiichi MURAOKA, Resident Representative, Austria Office, JICA, from 28 June to 14 July, 2004.

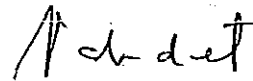
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Sarajevo, 8 July, 2004



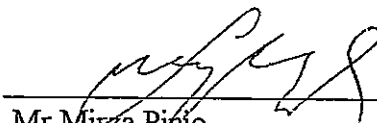
Mr. Keiichi Muraoka
Leader
Draft Explanation Study Team
Japan International Cooperation Agency

for



Dr. Anto Domic
Chief
Department of Health, Public and Other
Services to Citizens
Brcko District Bosnia and Herzegovina

Witness



Mr. Mirza Pijlo
Head of the Unit
Department for Multilateral relations,
Ministry of Foreign Affairs,
Bosnia and Herzegovina

ATTACHMENT

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The Bosnia and Herzegovina side agreed and accepted in principle the components of the draft report explained by the Team. The requested items described in Annex-1 shall be re-examined and referred to on finalizing the Basic Design Study Report.

2. Japan's Grant Aid Scheme

The Bosnia and Herzegovina side understands the Japan's Grant Aid Scheme as explained by the Team and described in Annex-4 of the Minutes of Discussions of the Basic Design Study signed by both parties March 10, 2004. And the Bosnia and Herzegovina side will take the necessary measures, described in Annex-2, to be taken by the Government for smooth implementation of the Project to be implemented on condition that the Japan's grant aid is extended to the Project.

3. Schedule of the Study

JICA will complete the final report in accordance with the confirmed item and send it to the Bosnia and Herzegovina side by September, 2004.

4. Other Relevant Issues

- 4-1. The Department of Health understands that the project will be implemented in two phases and understands its process (especially the process that tender will be implemented at each phases in accordance with "the Guidelines of the Japanese Grant Aid for General Projects and for Fisheries")
- 4-2. The Department of Health requested that the Japanese side would include a Sterilizer for BR 02 Maoca on finalizing Basic Design Report.
- 4-3. The Department of Health is responsible for allocation of the enough budget and personal staff for the operation and maintenance of the equipments provided by the Project.
- 4-4. The Department of Health will complete the renovation work of facilities shown as Annex-3 prior to installation of RTG apparatus.
- 4-5. The Department of Health is responsible for obtaining the permits, licenses and the other authorizations needed for the implementation of the Project (including the permit for the use of X-ray room), as well as the fees involved in the issuance of such authorizations.
- 4-6. Both parties confirmed that target facilities of the Project would not be integrated and/or privatized in the future.

Annex-1: Equipment list

Annex-2: Major undertakings to be taken by each government

Annex-3: Renovation work on radiology department to be undertaking by the recipient side

Annex-1: Equipment list

No.	Equipment/Project site	BR01	BR02	BR03	Total
		Brcko	Maoca	Bijela	
1-B	RTG apparatus (B)	1			1
1-D	RTG apparatus (D)		1		1
1-E	Protection door (A)	2			2
1-F	Protection door (B)		2		2
1-G	Monitor Window (A)	1			1
1-H	Monitor Window (B)	1			1
2	Film X-ray development machine			1	1
3	Ultrasound	1			1
4	Spirometer		1	1	2
5	ECG	1	1	1	3
6	Biochemistry analyzer	1			1
7	Spectrophotometer	1			1
9	Microscope	1	1	1	3
10	Centrifuge	2	1	1	4
11	Sterilizer	1	1		2
12	Balance	1			1
13	Destilator	1			1
14	Washing machine for lab. Glassware	1			1
15	Ambulance vehicle	1	1	1	3
16	Reanimation set	1	1	1	3
17	Laryngoscope	1			1

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Annex-2: Major undertakings to be taken by each government

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

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 K. H.
 K. H.
 K. H.

Annex-3: Renovation work on radiology department to be undertaken by the recipient side

NO.	Name	Recipient Country's Works										
		(*1) Category of renovation	① Removal of furniture, equipment fittings, and clearing space	② Removal of existing X-ray apparatus	③ Providing openings on the walls for installing doors/windows	④ Removal of existing walls, doors, windows	⑤ Construction of new partitions	⑥ Installation of general doors(not X-ray proof)	⑦ Replacement of electrical cables/tubes and utility pipes	⑧ Installation of ventilation fan and lighting fixtures	⑨ Power Supply (include replace existing power)	⑩ X-ray proof works on exist. Walls/windows etc.
BR1	Brcko	B	⊙	⊙	⊙	⊙	⊙	⊙	⊙	-	⊙	-
BR2	Maoca	C	⊙	⊙	-	⊙	-	-	-	-	-	⊙
BR3	Bijela	-	-	-	-	-	-	-	-	-	-	-
TOTAL		-	2	2	1	2	1	1	1	0	1	1

(*1) A: New plan with relocation of radiology, B: Renovation of existing X-ray room, C: No variation but install windows/doors
 ⊙ denotes the required work to be conducted by Bosnia and Herzegovina side prior to installation of X-ray apparatus
 (Identified at the target site during the basic design study survey in February 2004)

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 Xea
 M.H.
 [Signature]

5. Cost Estimation for the renovation of radiology section borne by the Recipient Country (2 sheets)

Code No.	Site Name	Survey		Type of Apparatus		Type of Room (#1)	Floor area of X-Ray room(m ²)		Comm and rooms (#3)	Floor area (m ²)	Ceiling H (m)	Location	Category of renov (#2)	Scope of renovation works(Civil/Architectural works)																																					
		Team	Date	Graphie	Scopie		Graphie	Scopie						A1. Removal of furniture, fittings, and clearing space (#4)		A2. Removal of existing X-ray apparatus (No.)		B1. Removal of existing wall(m)		B2. Removal of existing walls(m ²)		B3. Repairing and touch up on removed part of walls(m)		C. Removal of existing doors (No.)(#5)		D1. Construction of new walls(m)		D2. Construction of walls(m ²)		D3. Repairing and touch up for the construction of new D1x2+CHx2		E1. Construction of openings on the existing walls(m ²)		E2. Repairing and touch up of construction of openings (m)		F. Perimeter of openings		G. Fill the holes in the walls		H. Installation of regular doors (No.)(#6)		J1. X-ray shielding on the existing walls (barte)		J2. X-ray shielding on the existing walls (barte)		JxCH. X-ray shielding on the existing windows (m ²)		L1. X-ray shield door (600)		L2. X-ray shield door (900)	
<input type="checkbox"/> Federation of Bosnia and Herzegovina																																																			
FD1	Bosanska Krupa	B	2/09	○	○	2	24.0	21.9	1	71.8	3.0	Ex.P	C		71.8	2											0.71	3.40			1											1			71.8						
FD2	«Velika Kladusa»	B	2/18	-	○	5	-	«27»	1	«206»	«3»	Ext.	A																																«206»						
FD3	Sanski Most	B	2/17	○	○	3	33.9	-	1	95.5	3.0	Ex.P	B		95.5	2	4.0	12.0	14.0								0.71	3.40			1														95.5						
FD4	Kladanj	B	2/20	○	○	3	36.9	-	1	64.2	3.0	New	B		64.2	2	4.8	14.0	15.4	4	1.2	3.4	8.2	10.21	33.90	3	2			1																64.2					
FD5	Banovici	B	2/20	-	-	-	-	-	-	-	-	-	-		-																													-							
FD6	Zenica	A	2/27	○	○	3	37.6	-	1	56.4	2.7	Ex.P	C		56.4	1				2							0.71	3.40			1														56.4						
FD7	Fojnica	A	2/26	○	-	5	19.1	-	1	45.9	2.4	Ex.P	-		45.9	1																												45.9							
FD8	Visoko	A	2/26	-	○	5	-	24.3	-	1	52.6	-	Ex.P	-		52.6	1																											52.6							
FD9	Gorazde	A	2/25	○	-	5	21.7	-	1	38.8	3.0	New	A		38.8		3.6	10.8	13.2	1	9.0	26.9	23.9	5.57	18.18	2	1			15.32	1	1	1		3	7.0	21.0			1	1	1	1	1	38.8						
FD10	Vitez	A	2/27	-	-	-	-	-	1	-	-	-	-		-																													-							
FD11	Donji Vakuf	B	2/23	○	○	1	20.1	21.1	2	70.7	3.0	Ex.P	C		70.7	2												3.84	14.72	2		1				2								70.7							
FD12	Kiseljak	B	2/24	○	○	4	33.6	-	2	59.0	3.0	Ex.P	C		59.0													2.20	8.86	1		1												59.0							
FD13	Jablanica	B	2/25	○	-	5	32.9	-	1	68.3	3.0	Ex.P	B		68.3	2	2.1	6.2	10.1	1	4.3	12.7	14.5							8.86	1		1												68.3						
FD14	Citluk	B	2/27	○	○	3	47.2	-	1	96.3	3.0	Ex.P	B		96.3	2	2.4	7.1	10.7	2								0.71	3.40			1				1	○		10.2			1	1			96.3					
FD15	Stolac	B	2/28	○	-	2	22.7	22.7	1	61.4	-	Ex.P	-		61.4	1																												61.4							
FD16	Prozor/ Rama	A/B	2/11	○	○	3	26.7	-	1	36.9	3.0	Ex.P	B		36.9	1	2.0	6.0	10.0		2.8	8.4	11.6							9.26	1			1											36.9						
FD17	Tomislavgrad	B	2/26	○	○	2	25.7	29.9	1	90.6	-	Ex.P	C		90.6	2											0.56	3.00			1													90.6							
FD18	Mojmilo/ Saraj Polje	B	2/24	○	-	5	32.7	-	1	50.4	-	Ex.P	-		50.4	1																												50.4							
SUB. TOTAL						14		11		19	958.8		-		958.8	20	18.9	56.1	73.4	10	17.2	51.3	58.2	25.22	92.26	8	3	3	5	33.4	3	1	2	1		8	7.0	21.0	10.2		8	4	3	8	6	958.8					
<input type="checkbox"/> Republic of Srpska																																																			
RS1	Banja Luka	A	2/13	○	○	1	29.6	29.6	1	95.6	3.0	New	A		95.6		14.7	43.5	35.3	3	19.3	57.0	44.4	4.64	15.72	1	1		1	27.04	3	1	1		2.29	2	13.7	40.6			3	2	1	1	2	95.6					
RS2	Srbac	B	2/13	○	○	3	35.9	-	1	64.9	3.0	Ex.P	C		64.9	1												0.56	3.00			1													64.9						
RS3	Prijedor	A	2/14	○	○	1	23.4	23.4	2	79.2	3.0	Ex.P	B		79.2	2				2	1.2	3.6	8.4	2.91	12.26	1			1	5.86	1				1.64	2									79.2						
RS4	Bijeljina	A	2/19	-	○	3	43.6	-	1	74.9	3.1	Ex.P	B		74.9	1	2.6	7.9	11.3	1				0.71	3.40											2.29									74.9						
RS5	Zvornik	A	2/20	○	○	1	20.3	23.1	2	73.2	3.2	New	A		73.2		5.5	17.6	17.4	4	11.4	36.5	29.2	2.85	9.46		1	1		15.72	1	1	1		1	2.29	1	9.8	31.2			1	3	1	1	2	73.2				
RS6	Prnjavor	B	2/14	○	○	4	33.7	-	2	59.0	3.0	New	A		59.0		12.5	37.5	31.0	6				5.20	18.72	1	1	1	1																59.0						
RS7	Srebrenica	A	2/21	○	-	3	38.5	-	1	55.4	-	Ex.P	-		55.4	1																												55.4							
RS8	Skender V./ Knezevo	B	2/12	○	○	3	31.1	-	1	42.8	3.0	Ext.	B		42.8	1	17.6	52.8	41.2	7	6.9	20.7	19.8							15.12	2		1		4.58	2	13.4	40.2			1	1	1	1	42.8						
RS9	Bosanski/ Srpski Brod	B	2/16	○	○	3	29.7	-	1	44.4	3.0	New	A		44.4		7.8	23.4	21.6	2	7.8	23.4	21.6	3.99	15.12	2			1	6.46	1				1	11.1	33.3								44.4						
RS10	B.Samac/ Samac	A	2/16	○	○	3	50.2	-	1	80.9	3.2	Ex.P	C		80.9	2									0.71	3.40			1																80.9						
RS11	Rogatica	A	2/24	○	-	5	26.5	-	1	40.6	3.0	Ex.P	-		40.6	1																												40.6							
RS12	Vlasenica	B	2/21	○	-	5	40.3	-	1	94.5	-	Ex.P	-		94.5	2																												94.5							
SUB. TOTAL						11		9		15	805.4		-		805.4	11	60.7	182.7	157.8	25	46.6	141.2	123.4	21.57	81.08	5	3	4	6	70.2	7	3	1	2	13.09	8	54.8	165.7			8	8	4	9	10	805.4					
<input type="checkbox"/> Brcko																																																			
BR1	Brcko	A	2/17	○	○	1	22.2	22.9	1	89.3	3.3	既存	B		89.3	2	2.8	9.2	12.1	2	3.8	12.3	14.0	4.55	18.12	2		1	1							1.64	1								89.3						
BR2	Maoca	A	2/18	○	-	5	30.0	-	1	40.8	2.9	既存	C		40.8	1																													40.8						
BR3	Bijela	A	2/18	-	-	-	-	-		-	-	-	-		-																													-							
SUB. TOTAL						2		1		2	130.1		-		130.1	3	2.8	9.2	12.1	4	3.8	12.3	14.0	4.6	18.12	2		1	1						1.64	1									130.1						
TOTAL						27		21		36	1,894.3		-		1,894.3 </																																				

5. Cost Estimation for the renovation of radiology section borne by the Recipient Country (2 sheets)

Code No.	Site Name	Unit rate of direct cost per item (unit=Yen)																			Direct Cost (Unit= 1,000 yen)						
		3,000	15,000	1,108	2,104	1,600	7,634	2,104	1,108	913	913	7,434	41,399	3,826	15,434	195,000	260,000	145,000	175,000	20,914	600	X-ray Shield Doors & Windows	Other works	Total			
		A1. Removal of furniture, fittings, and clearing space	A2. Removal of existing X-ray apparatus	B2. Removal of existing walls(m ²)	B3. Repairing and touch up on removed part of walls(m)	C. Removal of existing doors	D2. Construction of walls(m ²)	D3. Repairing and touch up for the construction of new walls(m)	E1. Construction of openings on the existing walls(m ²)	E2. Repairing and touch up of construction of openings (m)	F1. Repairing and touch up for the new openings on the walls(m)	G. Fill the holes in the walls after removal of doors/windows(m ²)	H. Installation of regular doors	J2. X-ray shielding on the existing walls (barite mortar)(m ²)	K. X-ray shielding on the existing windows (mf)	L1. X-ray shield door (600)	L2. X-ray shield door (900)	L3. Monitor window (600)	L4. Monitor window (800)	M. New power supply	Z. Cleaning the space	Total cost for Japan side works	Total cost for BiH side works				
<input type="checkbox"/> Federation of Bosnia and Herzegovina																											
FD1	Bosanska Krupa									0.8	3.1																
FD2	《Velika Kladusa》																										
FD3	Sanski Most	36.0	30.0	13.3	29.5				0.8	3.1																	
FD4	Kladanj	42.0	30.0	15.5	32.4	6.4	25.9	17.3	11.3	31.0					82.8					195.0	260.0						
FD5	Banovici	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
FD6	Zenica		15.0				3.2			0.8	3.1									195.0	260.0						
FD7	Fojnica		15.0																								
FD8	Visoko		15.0																								
FD9	Gorazde	32.4		12.0	27.8	1.6	205.0	50.3	6.2	16.6	14.0				124.2	80.3			195.0	260.0	145.0						
FD10	Vitez	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
FD11	Donji Vakuf		30.0							4.3	13.4									195.0							
FD12	Kiseljak									2.4	8.1									195.0		145.0					
FD13	Jablanica	18.6	30.0	6.9	21.3	1.6	96.8	30.5				8.1										145.0					
FD14	Citluk	21.2	30.0	7.8	22.5	3.2				0.8	3.1				41.4		157.4			195.0							
FD15	Stolac		15.0																								
FD16	Prozor/ Rama	18.0	15.0	6.6	21.0		64.1	24.4					8.5							195.0							
FD17	Tomislavgrad		30.0							0.6	2.7											145.0					
FD18	Mojmilo/ Saraj Polje		15.0																								
SUB. TOTAL		168.3	300.0	62.1	154.4	16.0	391.8	122.5	27.9	84.2	30.5		331.2	80.3	157.4	1,560.0	1,040.0	435.0	1,400.0	125.5	575.3	4,435.0	2,627.6	7,062.6			
<input type="checkbox"/> Republic of Srpska																											
RS1	Banja Luka	130.5		48.2	74.3	4.8	435.0	93.5	5.1	14.4	24.7	17.0	82.8	155.2			585.0	520.0	145.0	175.0	41.8	57.4	1,425.0	1,184.6	2,609.6		
RS2	Srbac		15.0							0.6	2.7											175.0	20.9	38.9	175.0	78.2	253.2
RS3	Prijedor		30.0			3.2	27.5	17.7	3.2	11.2	5.4	12.2	82.8						145.0	175.0		47.5	320.0	240.6	560.6		
RS4	Bijeljina	23.6	15.0	8.7	23.7	1.6			0.8	3.1		17.0										175.0		44.9	175.0	138.4	313.4
RS5	Zvornik	52.8		19.5	36.6	6.4	278.5	61.4	3.2	8.6	14.4	17.0	41.4	119.4			195.0	780.0	145.0	175.0	41.8	43.9	1,295.0	744.9	2,039.9		
RS6	Prnjavor	112.5		41.6	65.2	9.6			5.8	17.1				78.1			390.0	260.0	145.0	175.0	41.8	35.4	970.0	407.0	1,377.0		
RS7	Srebrenica		15.0																					33.2		48.2	48.2
RS8	Skender V./ Knezevo	158.4	15.0	58.5	86.7	11.2	158.0	41.7				13.8	34.0	82.8	153.8			195.0	260.0		175.0	20.9	25.7	630.0	860.5	1,490.5	
RS9	Bosanski/ Srpski Brod	70.2		25.9	45.4	3.2	178.6	45.4	4.4	13.8	5.9		41.4	127.4			195.0	260.0		175.0	41.8	26.6	630.0	630.3	1,260.3		
RS10	B. Samac/ Samac		30.0						0.8	3.1												175.0		48.5	175.0	82.4	257.4
RS11	Rogatica		15.0																					24.4		39.4	39.4
RS12	Vlasenica		30.0																					56.7		86.7	86.7
SUB. TOTAL		548.0	165.0	202.4	332.0	40.0	1,077.6	259.7	23.9	74.0	64.1	97.3	331.2	633.8			1,560.0	2,080.0	580.0	1,575.0	209.1	483.2	5,795.0	4,541.3	10,336.3		
<input type="checkbox"/> Brcko																											
BR1	Brcko	27.5	30.0	10.1	25.5	3.2	93.6	29.5	5.0	16.5							390.0		145.0	175.0	20.9	53.6	710.0	369.2	1,079.2		
BR2	Maoca		15.0			3.2																	24.5	520.0	85.0	605.0	
BR3	Bijela	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SUB. TOTAL		27.5	45.0	10.1	25.5	6.4	93.6	29.5	5.0	16.5			12.2	41.4	42.3		390.0	520.0	145.0	175.0	20.9	78.1	1,230.0	454.2	1,684.2		
TOTAL		743.7	510.0	274.7	511.9	62.4	1,563.1	411.7	56.9	174.8	94.6	109.5	703.8	756.4	157.4	3,510.0	3,640.0	1,160.0	3,150.0	355.5	1,136.6	11,460.0	7,623.1	19,083.1			

《》 FD2 Velika Kladusa: Construction of the new radiology department (total floor area 276 m²) has been estimated as 150,000 KM (10,500 thousand Japanese Yen) as FBiH side

FD	4,435.0	2,627.6	7,062.6
《FD2》		10,500.0	10,500.0
RS	5,795.0	4,541.3	10,336.3
BR	1,230.0	454.2	1,684.2
Total	11,460.0	18,123.1	29,583.1

6. Other Relevant Data

Project Appraisal Document on a Social Insurance Technical Assistance Project 2003, World Bank

Poverty Profile of Bosnia and Herzegovina 2002, World Bank

Health Care Systems in Transition 2002, WHO

Policy and Strategies for Health in Republic of Srpska 2003, Ministry of Health and Social Welfare