The Republic of the Union of Myanmar
Department of Health, Ministry of Health

PREPARATORY SURVEY REPORT
ON
THE PROJECT FOR UPGRADING THE HEALTH FACILITIES IN CENTRAL MYANMAR
IN
THE REPUBLIC OF THE UNION OF MYANMAR

December, 2012

Japan International Cooperation Agency (JICA)

Consortium of
Yamashita Sekkei Inc.
Nippon Koei Co., Ltd.
Binko International Ltd.

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PREFACE

Japan International Cooperation Agency (JICA) decided to conduct the preparatory survey and entrust the survey to the Consortium of Yamashita Sekkei Inc.,Nippon Koei Co.,Ltd. and Binko International Ltd.

The survey team held a series of discussions with the officials concerned of the Government of the Republic of the Union of Myanmar, and conducted field investigations. As a result of further studies in Japan, 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.

Finally, I wish to express my sincere appreciation to the officials concerned of the Government of Myanmar for their close cooperation extended to the survey team.

December, 2012

Ms. Nobuko Kayashima
Director General,
Human Development Department
Japan International Cooperation Agency

SUMMARY

1. Outline of the country

The Republic of the Union of Myanmar (hereinafter, Myanmar) lies on the western side of the Indochina peninsula and borders with Thailand, Laos, India, Bangladesh and China.

Myanmar has a total area of 677,000 square kilometers with a population of 62.4 million people (estimate of the Government of Myanmar (hereinafter, the GOM) and IMF in 2011) and young population (under 15 years of age) accounts for about 30 percent of the total population. As a whole, in Myanmar, one third of the population of Japan lives in an area 1.8 times larger than Japan. Ethnically, the Burma tribe nearly accounts for 70 percent as the predominant ethnic group and there are ethnic minorities, such as the Shan tribe, Kayin tribe, Rakhaing tribe, Mon tribe and other minority tribes. Although 90 percent of them are considered Buddhists, there are also Christians and Muslims. The official language is the Burmese. It is said, however, that there are more than 100 languages including the languages of ethnic minorities and the dialects.

The GDP of Myanmar in 2011 was 50.2 billion dollars. The main agricultural product is rice, and paddy fields account for 60 percent of the agricultural land. From 1962 until 1988, the military government led by General Ne Win had impelled state-controlled economy led by the state-owned enterprises under the national basic outline called the Burmese Way to Socialism. The economy of Myanmar, however, stagnated dramatically to the extent of becoming the poorest country due to its secluded economy.

Currently, the country of Myanmar is still in a transition period to market economy, and due to its rigid economic structure and uncertain economic policy, it is suffering from chronic budget deficit and decrease in currency value. In addition, because of a number of institutional and structural constraints, economic activities including foreign investments, trade and financial transactions continue to remain stagnant. In Myanmar, a general election was held in November of 2011 for the first time in about 20 years. The new government inaugurated in March, 2011, made a 180-degree turn from its inward-oriented policy to hammer out measures to actively invite foreign investments. Furthermore, Myanmar has been granted the ASEAN chairmanship for 2014 and aims at improving the relationship with Europe and the United States.

2. Background and Outline of the Project

In Myanmar, both the infant mortality rate (IMR) and the maternal mortality rate (MMR) are very high. Concretely, the infant mortality rate per one thousand live birth (2009) , the under five mortality rate (UFMR) per one thousand live birth (2009), and maternal mortality rate per 100,000 people (2008) were 54, 71 and 240, respectively, while the average in Southeast Asia corresponded to 45, 59 and 240, respectively (WHO's "World Health Statistics 2011").

Based on this background, JICA conducted a comprehensive field and on-site survey during June and July of 2011 aimed at collecting and analyzing information on the current status and issues in the field of maternal and child health as well as trends in other donors with the aims to study the direction of cooperation and provision of Japan's new aids. At the end of the survey, the need to strengthen the basic health services which play a fundamental role in providing health services to mothers and children in rural areas was confirmed. Currently, the Ministry of Health of Myanmar is implementing various measures with the purpose to improve the basic health services in rural areas through an improvement in access to health services based on the development of basic health facilities. These measures include the development of both rural health centers (RHC) and sub-rural health centers (SHC), and the increase in the number of basic health staff (BHS) to work in the said centers as well as the strengthening of education and in-service training, and the referral system. As a result of the efforts, the number of midwives, which had been 8,121 in 1988, has increased to 19,051 by 2009. The figure meets the benchmark of WHO, which stands at one midwife for a population of 5000. In the meantime, the number of RHC which had been 1,337 in 1988 was 1,504 in 2009, and thus, the benchmark of one RHC for a population of 20,000 people in the country has not been met yet. There are a number of problems facing the existing facilities due to aging of facilities such as cracks in the foundation, sinking and collapse of floors, which jeopardize the safety of patients.

Under the circumstances, in order to improve the current situation, Japan's Grant Aid was requested by the government of Myanmar for the development of RHC and SHC as well as the provision of equipment for medical facilities in Magway region which is located in the central dry area where the health index regarding the health of mothers and children is the worst in the nation. The request consists of the following:

Table i Contents of the Request

Contents of the Request	
Facilities	Construction of RHCs (rural health centers), SHCs (sub-rural health centers)
Equipment	Provision of equipment to RHCs and SHCs
Others	Implementation of management training for Township Medical Officers (TMOs)

3. Outline of the Survey / Contents of the Project

In response to the above request, JICA has dispatched the Preparatory Survey Team (hereinafter referred to as "the Team") thrice from January to November, 2012. The Team elaborated the facilities plan and the equipment plan based on the domestic analysis during the Survey. Thereafter, the Team explained the outline of the result of the Survey to the GOM in November, 2012, and compiled the final report of the Survey.

In order to achieve the Survey, the Project is intended to build 33 RHCs including new RHCs upgraded from SHC and provide necessary equipment to the existing 16 RHCs, 281 SHCs, and 9 Township Hospitals (TSHs) as well as 15 Station Hospitals (STHs) which are higher level medical facilities in the 7 townships （Pakokku, Seik Phyu, Pawk, Myaing, Salin, Say Toke Ta Ya, Saw）which

have sustained heavy flood damage, Natmaut township and Yo Sa Gyo township in Magway region. The Project does not only increase the number of patients attending to such medical centers, but also achieve the development of an overall referral system in the whole townships in Magway region.

Specifically, the followings will be implemented in the Project.

(1) Construction of new 33 RHCs

- To rebuild new centers because of the lack of safety due to the aging and the flood damage.
- To enhance the support function for delivery such as labor rooms, delivery rooms, and recovery rooms in order to promote facility birth.
- To provide equipment for these facilities.

(2) Provision of equipment to the existing 16 RHCs / 281 SHCs

- To add delivery function by providing delivery tables to the existing RHCs
- To provide to the existing RHCs/SHCs new equipment for outreach activities.

(3) Provision of equipment to 9 TSHs

- To provide equipment relating to surgery, labor, and new-born infants in order to strengthen medical services for patients referred from the primary health care facilities such as RHCs, SHCs, and STHs.

(4) Provision of equipment to 15 STHs

- To provide equipment related to surgery, labor, and new-born infants in order to strengthen medical services for patients referred from the primary health care facilities such as RHCs and SHCs.

(5) Study of the Request

The request from the GOM is the construction of RHCs and SHCs and the provision of medical equipment in Magway region aimed to improve the maternal and child health, and the basic health care services in rural areas. On the basis of the contents of the request, discussions were held with the GOM and it was determined that it is necessary to build a referral system including the improvement in services, not only of the RHCs and SHCs, but also of STHs and TSHs for the purpose of an overall improvement in maternal and child health services.

The Project consists of providing new buildings and equipment to the RHCs to be newly constructed, a set of equipment for delivery assistance to the existing RHCs and a set of equipment for midwifery which is required to develop outreach activities of the SHCs, while STHs and TSHs will be provided with a set of equipment related to surgery, delivery and newborn babies.

Table ii Outline of the Project

<table>
<tr><td colspan="3">Contents of the Project</td></tr>
<tr><td>Construction</td><td colspan="2">(1) Construction of RHCs ; Reinforced concrete, one story building

<table><tr><td colspan="2">Content</td><td>Floor Area (m^2)</td><td>No. of buildings</td></tr><tr><td colspan="2">Standard type</td><td>198</td><td>29</td></tr><tr><td>Rooms</td><td>HA room, Storage room, PHS room, Clinic, Recovery room, Labor room, Delivery room, Midwife room, LHV room, Waiting area</td><td></td><td></td></tr><tr><td colspan="2">Raised floor type</td><td>188</td><td>4</td></tr><tr><td>Rooms</td><td>HA room, Storage room, PHS room, Clinic, Recovery room, Labor room, Delivery room, Midwife room, LHV room, Waiting area</td><td></td><td></td></tr><tr><td colspan="3">Total</td><td>33</td></tr></table>
(2) Ancillary facilities
1. Electrical works: Power generator, power points, lightening protection system, etc.
2. Sanitary and Water supply: Sanitary appliance, water supply, drainage, etc.</td></tr>
<tr><td rowspan="9">Equipment</td><td rowspan="7">1) RHC</td><td>• Outpatient Examination
Medical Staff Desk & Chair, Patient Stool, Examination Table, Examination Lamp, Sphygmomanometer, Stethoscope, Diagnostic Set, Medicine Cabinet, Boiling Sterilizer、etc</td></tr>
<tr><td>• MW. Obs. Consultants
Medical Staff Desk & Chair, Sphygmomanometer, Stethoscope, Fetus Stethoscope, Obstetric Examination Set, Midwife Kit, etc.</td></tr>
<tr><td>• First Stage Labor Room
Labor Bed, Working Table, etc.</td></tr>
<tr><td>• Delivery Room
Delivery Table, I.V. Stand, Examination Lamp, Delivery Instrument Set, Infant Treatment Table, etc.</td></tr>
<tr><td>• Recovery Room
Recovery Bed, Baby Cot</td></tr>
<tr><td>• Health Assistant Room
Desk & Chair, Health Assistant Kit, etc.</td></tr>
<tr><td>• Lady Health Visitor Room, Public Health Supervisor Room
Desk & Chair, LHV/Midwife Kit, PHS Kit, etc.</td></tr>
<tr><td>2) SHC</td><td>Midwife Kit</td></tr>
<tr><td>3）TSH</td><td>Operating Lamp （mobile）, Operating Table, Infant Incubator (open type warmer), Phototherapy Unit, Autoclave(electric), Delivery Table, Labor and Recovery Bed, Caesarean Operation Instrument Set, Suction Unit, Oxygen Generator, etc.</td></tr>
<tr><td>4) STH</td><td>Operating Lamp （mobile）, Operating Table, Infant Incubator (open type warmer), Phototherapy Unit, Autoclave（non electric), Delivery Table, Labor and Recovery Bed, Caesarean Operation Instrument Set, Suction Unit, Oxygen Generator, etc.</td></tr>
</table>

4. Construction Period and Cost Estimation of the Project

In view of the scale of the facilities, the dispersion of the Project sites, local climatic conditions, local construction situation, budgetary systems of each country, and the preparation procedure of the Project sites, etc., it is estimated to take about 19 months to complete the Project, including 4 months for the detailed design and tendering, 15 months for construction works of the facilities, and equipment installation works as well as inspection. The estimated cost of the Project to be covered by the GOM is approximately 622,163 Japanese yen..

5. Evaluation of the Project

(1) Relevance

The Project, which will be carried out in accordance with Japan's Grant Aid Scheme, is considered valid in terms of the following perspectives:

- Appropriateness

  In October of 2011, a large scale flood damage occurred in the central dry area including Magway region and not a few medical facilities were heavily damaged with the consequence that the provision of appropriate medical services was hampered. Subsequently, an urgent repair and restoration work was undertaken to reopen the affected facilities. Despite the emergency measures, the fact remains that the damage inflicted by the flood and due to the aging is very severe to the extent that it jeopardizes the safety of the patients for emergency treatment. The target area includes 7 townships in Magway region which sustained heavy flood damage and the need for a full-scale restoration by rebuilding the existing facilities is urgent. In addition, the proportion of the poverty group in the region stands at 27 percent in excess of the national average of 25.6 percent in 2010. The Project is poised to provide the poverty group with adequate medical services and will be beneficial to the people of the region, accordingly.

- Necessity

  When compared the health index in Magway region to that of the whole of Myanmar, the home delivery rate is higher and facility birth rate is lower, while the IMR and UFMR are higher by 4.4 points and 3.6 points, respectively. This is partly due to the fact that proper health services are not provided because of the lack of, or the aging of RHCs and SHCs which serve as the first point of contact for local people with public medical services in the rural areas of the region. The situation is the same with both TSHs and STHs to which patients of RHCs and SHCs are referred. The Project is aimed to build necessary RHCs and provide necessary equipment for RHCs and SHCs. It is also the aim of the Project to adequately provide equipment to TSHs and STHs with the purpose to provide comprehensive primary health care services.

- Priority

  The objective of the Project which consists of contributing to the improvement of medical facilities which play a vital role in providing the primary health care system in the 9 townships in

Magway region is in conformity with that of “Expanding health care coverage and enhance the quality of health care” and “Accelerating rural health development activities” of the “National Health Plan 2006-2011” of Myanmar.

In addition, the policy of the “Five Year Reproductive Health Program” implemented in December of 2008 which stipulates the need for an increase in assisted deliveries as well as prenatal and postnatal care by the expert health care staff, and the increase of facility birth, is also in accordance with the development and expansion of facilities and equipment for the improvement in delivery services at the RHCs, which is the objective of the Project.

(2) Effectiveness

The effectiveness of the Project will be confirmed by the following indexes.

Table iii Quantitative index

Index	Reference value (2012)	Target value (2018)
1. Service beneficiary (4 new RHCs will be built) (people)	0	80,000
2. Facility birth service beneficiary (people)	5,800	17,000
3. Facility birth (number)	35	99

Table iv Qualitative index

1. Construction of new facilities and provision of new equipment will contribute to the improvement in the quality of the medical services provided.
2. Construction of new facilities and provision of new equipment will contribute to favorable impressions among local people and the following effect can be expected: • The motivation of basic health care staff working in RHCs/SHCs, TSHs and STHs will be enhanced. • The satisfaction of patients towards RHCs/SHCs, TSHs and STHs will be heightened. • Awareness of facility birth will be enhanced.
3. Safety of local people will be improved because of the construction of natural disaster resistant medical centers (They can be used as evacuation shelters).

Contents

[Appendices]

Location Map

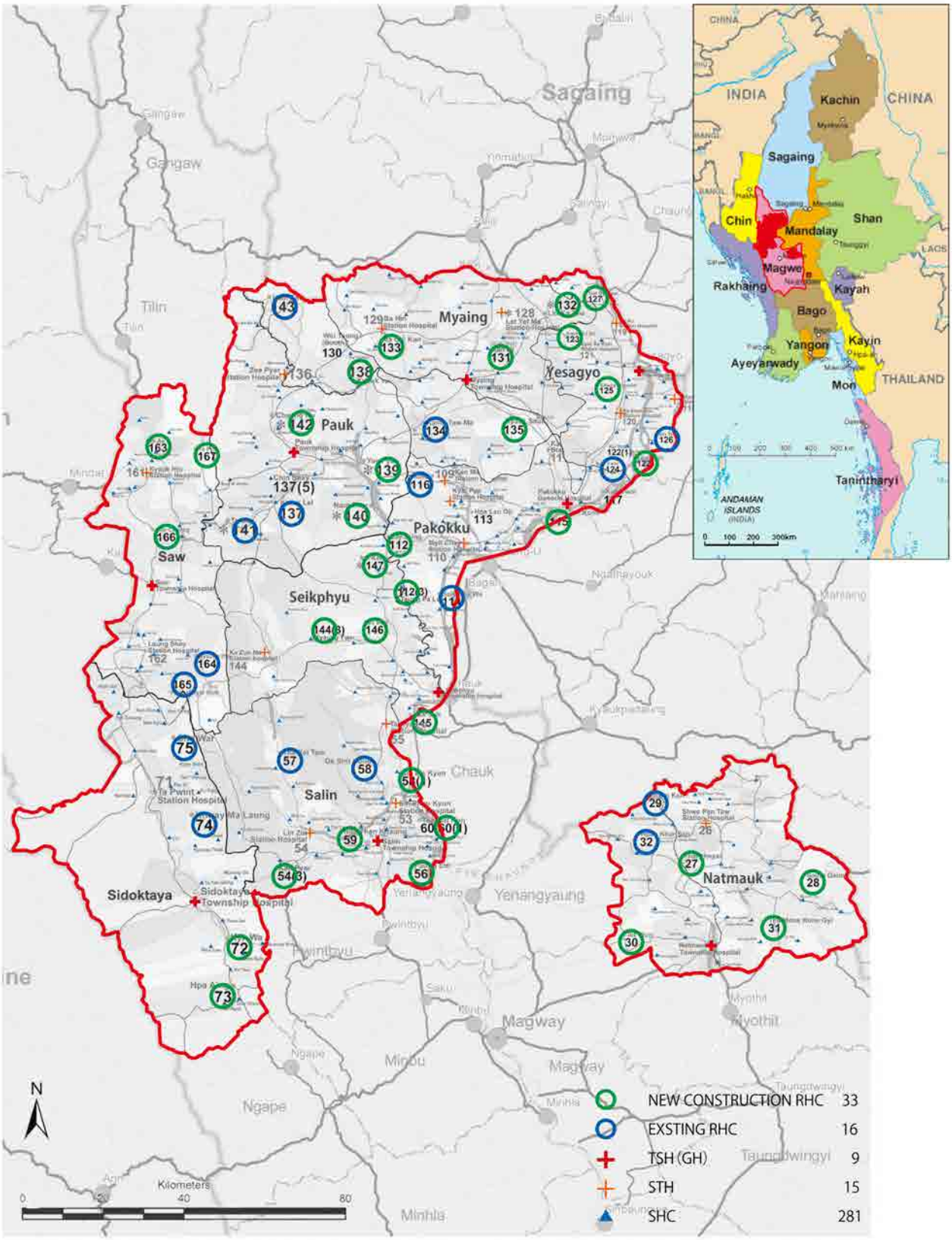


Fig. i: Project Sites and its Surroundings

Perspective

Fig. ii : Aerial Perspective

Fig. iii : Perspective of the Standard RHC

Fig. iv : Perspective of the Raised-Floor RHC

List of Figures & Tables

Abbreviations

AMDA	The Association of Medical Doctors of Asia
ARI	Acute Respiratory Infection
BHS	Basic Health Staff
CDMA	Code Division Multiple Access
CMSD	Central Medical Store Depot
COD	Chemical Oxygen Demand
DF	Drug Fund
DFID	Department for International Development
DOH	Department of Healt
EIA	Environmental Impact Assessment
E/N	Exchange of Notes
EOJ	Embassy of Japan
G/A	Grant Agreement
GDP	Gross Domestic Product
GH	General Hospital
GOJ	Government of Japan
GOM	Government of Myanmar
GSM	Global System for Mobile Communications
HA	Health Assistant
IEC	Information, Eduation, Communication Activities
LHV	Lady Health Visitor
MDG5	Millennium Development Goals,
MMR	Maternal Mortality Ratio
MNPED	Ministry of National Planning and Economic Development
MOH	Ministry of Health
MW	Midwife
NHP	National Health Plan
PHS	Public Health Supervisor
PQ	Prequalification
RHC	Rural Health Center
RHD	Reginal Health Director
SHC	Sub-rural Health Center
STH	Station Hospital
TMO	Township Medical Officer
TSH	Township Hospital
UNDP	United Nations Development Programme
UNFPA	United Nations Population Fund
Unicef	United Nations Children’s Fund
WHO	World Health Organization

Chapter 1 Background of the Project

1-1 Background of the Project and Request from the Recipient Country

The burden of infant mortality rate (IMR) and the maternal mortality rate (MMR) in Myanmar is considerably high. Concretely, IMR is 54 deaths per one thousand live births (2009) , the under five mortality rate (UFMR) is 71 deaths per one thousand live births (2009), and MMR is 240 deaths per 100,000 people (2008), while the average in Southeast Asia corresponded to 45, 59 and 240, respectively (WHO's "World Health Statistics 2011").

Based on this background, JICA conducted a comprehensive field and on-site survey during June and July of 2011 aimed at collecting and analyzing information on the current status and issues in the field of maternal and child health as well as trends in donors with the aims to study the direction of cooperation and provision of new aids by the Government of Japan (hereinafter, the GOJ). At the end of the survey, the need to strengthen the basic health services which play a fundamental role in providing health services to mothers and children in rural areas was confirmed. The Ministry of Health of Myanmar has begun to take various measures with the purpose to improve the basic health services in rural areas through an improvement in access to health services based on the development of basic health facilities. These measures include the development of both Rural Health Centers (RHC) and Sub-rural Health Centers (SHC), and the increase in the number of Basic Health Staff (BHS) to work in the said centers as well as the strengthening of education and in-service training, and the referral system. As a result of the efforts, the number of midwives, which had been 8,121 in 1988, has increased to 19,051 in 2009. The figure meets the benchmark of WHO, which stands at one midwife for a population of 5,000. In the meantime, the number of RHC which had been 1,337 in 1988 was 1,504 in 2009, and thus, the benchmark of one RHC for a population of 20,000 people in the country has not been met yet. There are a number of problems facing the existing facilities due to aging such as cracks in the foundation, sinking and collapse of floors, which jeopardize the safety of patients.

Under the circumstances, in order to improve the current situation, Japan's Grant Aid was requested by the Government of Myanmar for the construction of RHC and SHC as well as the provision of medical equipment in Magway region which is located in the central dry area where the health index regarding the health of mothers and children is worse than the average of the nation. The request consists of the following:

Table 1-1 Contents of the Request

Contents of the Request	
Facilities	Construction of RHCs (rural health centers), SHC (sub-rural health centers)
Equipment	Provision of medical equipment to RHCs and SHCs
Others	Implementation of management training for township medical officers (TMOs)

In the rainy season of 2011, meanwhile, heavy rainfall occurred in the central dry area including Magway region and, due to the resulting flood, more than 100 people died or went missing, and

thousands of people were affected. Not a few aging facilities were heavily damaged and especially require an urgent repair and restoration. Although emergency measures have been taken for affected facilities, the extent of damage is severe and cracks in the foundation, sinking and collapse of floors are observed, which jeopardizes the safety of patients.

STHs and TSHs are to take on rather complicated cases such as abnormal deliveries which cannot be handled at RHCs. However, due to the aging of medical equipment in these hospitals, adequate services are not provided at present.

1-2 Environmental Social Consideration

The Project is an upgrading program of a number of medical facilities already in operation. Impact on the environment will only derive from the expansion of the existing facilities and the construction and installation works. Therefore, the Project can be classified into the category C.

The need for the Environmental Impact Assessment Law is well recognized in Agenda 21 of Myanmar. However, at present, there is no regulatory mandate for the formulation of such Environmental Impact Assessment. Because of this situation, neither an Environmental Impact Assessment nor an Initial Environmental Examination (IEE) is required for the Project.

Chapter 2 Contents of the Project

2-1 Basic Concept of the Project

2-1-1 Overall Goal and Project Goal

The infant mortality rate (IMR) in Myanmar is 54 deaths per 1000 live births (2009), the under five mortality rate (UFMR) is 71 deaths per 1000 live births (2009) and the maternal morality rate (MMR) is 240 per 100,000 births (2008). Considering above numbers, Myanmar has the same or relatively lower rates than those of the average rate in Southeast Asian countries. (IMR: 45, UFMR: 59, MMR: 240)

There is a significant disparity in the health situation between urban and rural area in Myanmar. Strengthening of basic health services in order to provide maternal and child health service in rural areas are urgently needed. Ministry of Health has been implementing effort in maintenance of Rural Health Center (RHC) and Sub-rural Health Center (SHC), increasing of Basic Health Staff (BHS) and strengthening of referral system in order to improve basic health services in rural areas through maintenance of primary health facilities. However, the number of RHC only changed 1,337 into 1,504 from 1988 to 2009 and has not yet achieved the national standards of the country which is one RHC per 20,000 people (3000 RHCs in total). There are a number of problems facing the decrepit facilities due to aging such as cracks in the foundation and collapsing of floors, which jeopardize the safety of patients.

To improve above situations, the Government of Myanmar had requested Japan's Grant Aid to upgrade health facilities and medical equipment especially in Magway region which is located in central dry area where health index especially maternal and child health are considerably low within the whole country.

There are currently 167 RHCs at targeted areas in Magway region and the number of those facilities has not yet achieved those of the national standard. (200 RHCs)

Under those circumstances, the severe and strong rain in central dry area including Magway region gave serious flood damage to thousands of people such as more than 100 deaths and missing. As a result, it has become one of urgent issues to recover and upgrade the facilities in the flood affected areas.

Some emergency measures have been taken, however, there is still huge issue in their safety in the facilities because of the flood damages and decrepit.

In respect to the common practice of home childbirth in rural areas, the Ministry of Health has conducted educational program to encourage facility birth or birth with Skilled Birth Attendant (SBA). The upper level medical facilities such as Station Hospital (STH) and Township Hospital (TSH) have provided services to abnormal delivery since RHCs can not provide adequate services. However, the services have not been sufficient because of decrepit of the necessary medical equipment.

The aim of the Project is to increase access numbers of primary health care and facility birth for the seven townships (Pakokku, Seik Phyu Pauk, Myaing, Salin, Saw Say Toke Ta Yar) which have sustained the flood disaster in October 2011, and Natmaut and Yasagyo townships in Magway region. The Project eventually is expected to achieve to improve major health index including MMR and IMR.

2-1-2 Summary of the Project

In order to achieve the above goals, the Project is intended to build 33 RHCs and provide necessary medical equipment to the existing 16 RHCs, 281 SHCs, and 9 Township Hospitals (TSHs) as well as 15 Station Hospitals (STHs), which are higher level medical facilities in the 9 townships which have including 7 townships sustained heavy flood damage, Natmaut township and Yo Sa Gyo township in Magway region. The Project does not only increase the number of medical centers, but also enhance the development of an overall referral system in these townships.

2-2 Outline Design of the Japanese Assistance

2-2-1 Design Policy

2-2-1-1 Basic Policy

(1) Scope of Assistance

The survey has confirmed the adequacy of developing primary healthcare-related facilities and equipment in the 9 townships including 7 townships in Magway region which has sustained flood damage in October, 2011, and in the township of Natmaut where the health index is limited as well as in the township of Yasagyo where flood damage occurs every year.

Specifically, the following functions will be improved.

1) Construction of new RHCs

- To build new centers because of the lack of safety due to the aging and the flood damage.
- To enhance the support function for delivery such as labor rooms, delivery rooms, and recovery rooms in order to promote facility birth.
- To provide equipment for these facilities.

2) Provision of equipment to the existing RHCs / SHCs

- To add delivery function by providing delivery tables to the existing RHCs
- To provide to the existing RHCs/SHCs new equipment for outreach activities and replace the aging old equipment relating to primary health care.

3) Provision of equipment to Township Hospitals

- To provide equipment relating to surgery, delivery, and new-born infants and strengthen

medical services to patients referred from the primary health care facilities such as RHCs, SHCs, and station hospitals.

4) Provision of equipment to Station Hospitals

- To provide equipment related to surgery, delivery, and new-born infants and strengthen medical services to patients referred from the primary health care facilities such as RHCs and SHCs.

(2) Selection of the Project sites

The selection of the Project sites consists of; 1. Sites for construction of new RHCs, and 2. Sites for providing equipment to all RHCs and all SHCs of selected townships, as well as TSHs and STHs.

1) Selection of sites for the construction of new RHCs

1. Selection based on the First Field Survey

The sites for the construction of new RHCs were selected based on the First to the Third Field Survey. As a result of the First Survey, 56 sites including all the RHCs with a SHC to be upgraded to RHC existing in the 7 townships of Magway region and in the township of Natmaut as well as in the township of Yasagyo were selected as the sites to survey on the present conditions.

Table 2-1 Selected sites subject to survey on the current situation (56 sites)

Name of Township	Number of sites to survey
Pakokku	7
Seik Phyu	4
Pauk	8
Myaing	6
Natmaut	7
Salin	8
Say Toke Ta Yar	4
Saw	5
Ya Sa Gyo	7
Total	56

Both sides agreed that the Project sites will be selected according to the criteria below.

Priority	Facility	Equipment
1	Flood hazarded area	Flood hazarded area
2	Securing access road for vehicles of construction	Securing the health staff and the cost in operation and maintenance
	Securing land for facility construction and ensure to continue the health care service during the construction period	Securing the infrastructure such as water and electricity, etc.
3	Securing the health staff and the cost in operation and maintenance	
4	Securing the infrastructure such as water and electricity etc.	

2. Selection based on the Second Field Survey

The Second Field Survey on the 56 sites selected after the First Field Survey in accordance with the survey results which were conducted mainly by local consultants was based on topographical survey, geological survey and survey on the current situation.

After the analysis of the Second Survey Results, 17 sites were excluded from further survey and the remaining 39 were selected as the candidate sites for the construction of new RHCs.

- Two RHCs which were built in 2007 by AMDA are not eligible because the facilities are still new.
- One RHC which was built in 2011 is not eligible for the same reason.
- Six sites where new construction cannot be planned due to their narrow area are not eligible.
- Seven sites to which access by construction vehicles is not allowed for a long period of time during the rainy season and the construction works cannot be expected to finish within the time specified are not eligible.
- One site which was doubly counted as an existing RHC and alternative site is excluded.

3. Selection based on the Third Field Survey

The 39 sites which were selected as a result of the Second Survey were subject to an exhaustive study and after detailed analysis of the results, 33 sites were finally selected. In the study, the head administrator of each RHC and the community leader were consulted based on the facility layout plan for securing the right to use the land and the operational and administrative expenses to be incurred after the construction, and approvals were obtained.

The following two factors were given priority for the purpose of field survey on the candidate sites for the construction:

- That, the site should have enough area to allow a one-storied standard type facility to be built.
- That, the site should allow access to construction vehicles even in rainy season to enable continued construction.

Eventually, 33 sites were selected for the construction of RHCs based on the field survey.

Table 2-2 Sites finally selected for the construction of RHCs(33 sites)

No.	Township name	RHC No	Name	No.	Township name	RHC No.	Name
1	Pakokku	112	Lay Taing	1	Natmaut	27	Tharhmyar
2		115	Ywa Thit Kone	1		28	Saingkaung
3		112(	Taugpalu	1		30	Tatnaeun
4	Seik Phyu	145	Auk Seik	1		31	Thahmonekonegyi
5		146	Lat Sail	2	Salin	56	Phaung Lin
6		147	Inn Gan	2		59	Nga Than Gaung
7		144(	Kyaung Yuan	2		54(	Kan Pyar
8	Pauk	138	Kyauk Taing Hin	2		58(	Sin Ma Kty
9		139	Ye Bya	2		60(	Thanatkone
1		140	Nant Thar	2	Say Toke Ta Yar	72	Kyee Wa
1		142	Chaung Gu	2		73	Phan aing
1	Myaing	131	Kan Net	2	Saw	163	Mi Ai
1		132	Lim ka Taw	2		166	Ka Chaung
1		133	Ma Gyi Kan	2		167	Ta Byin
1		135	Kyauk Sauk	3	Ya Sa Gyo	122	Sin Ma Ye
				3		123	Kokko Su
				3		125	Khwe Hanyoke
				3		127	Thit Gyi Taw

2) Selection of the Project sites for provision of medical equipment

1. Newly built 33 RHCs

2. Other selected RHCs and all SHCs in 9 townships

16 RHCs and 281 SHCs which are located within 9 townships, except newly built 33 RHCs, as shown in the following Table.

Table 2-3 Number of the Project site of RHC/SHC for provision of equipment

Name of Township	Project site for provision of equipment	
	Number of RHC	Number of SHC
Pakokku	2	32
Seik Phyu	0	18
Pauk	3	35
Myaing	1	35
Natmaut	2	31
Salin	2	33
Say Toke Ta Yar	2	23
Saw	2	31
Ya Sa Gyo	2	42
Total	16	281

3. Selected TSHs for provision of medical equipment

9 TSHs including one general hospital are located in townships where RHCs will be newly constructed.

Table 2-4 List of Project sites of Township Hospital for improvement of equipment

Name of Townshp	Project site for provision of equipment
Pakokku	Pakokku General Hospital
Seik Phyu	Seik Phyu Township Hospital
Pauk	Pauk Township Hospital
Myaing	Myaing Township Hospital
Natmaut	Natmaut Township Hospital
Salin	Salin Township Hospital
Say Toke Ta Yar	Say toke Ta Yar Township Hospital
Saw	Saw Township Hospital

4. Selected STHs for provision of medical equipment

It is targeting 15 STHs in 9 townships where selected sites for construction of RHCs except two STHs which doctors are not available and one STH which medical equipment has been already upgraded.

Table 2-5 List of Project site of Station Hospital for provision of equipment

Name of Township	STH No.	Name of Station Hospital
Pakokku	109	Kan Ma
	110	Myit Chay
	111	Kaing
Seik Phyu	144	Kan Zun Ma
Pauk	136	Za Bya
Myaing	128	Let Yat Ma
Natmaut	26	Shwe Pan Taw
Salin	53	Sin Phyu Gyun
	54	Lin Zin
	55	Ta Nyaung
Saw	161	Kyauk Htu
Ya Sa Gyo	118	Mye Taw
	119	Ma Oo
	120	Pa Khan Gyi
	121	Kyat Su Kyin

2-2-1-2 Policy on Natural Conditions

(1) Temperature and Solar radiation

Climatically, Magway region is hot and the average temperature is high in comparison to other areas in Myanmar. For this reason, the ceiling should be higher than 3.65m (12 feet) in accordance with the design criteria of the Ministry of Health. Hall areas will be planned to be wide open to the outside air. In addition, the building should be arranged in the East-West axis to avoid direct insolation and allow for sufficient natural ventilation.

(2) Floods and Water damage

Of the 12 RHCs which sustained damage by the flood of October of 2011, the RHC No. 115 and No. 112 in Pakokku, No. 58 (1) in Salin and No. 122 in Ya Sa Gyo are exposed to high water level

damage every year. Consequently, raised-floored (floor height of 2m) facilities will be planned for these 4 RHCs in the same manner as the existing RHCs and other buildings in the vicinity. In all other sites of the Project, the first floor level must be kept at a height of 60cm above the surrounding ground level to prevent exposure to storm water during the rainy season.

2-2-1-3 Policy on Socio-economic Conditions

(1) Promotion of Facility birth

It has been the custom for many generations in the rural areas of Myanmar that deliveries are practiced at home surrounded by the family with the assistance of neighbouring midwives. However, because of the high maternal mortality rate at the time of delivery and at post-delivery at home, the Ministry of Health has begun to promote facility birth to improve this situation. In the Project, it is intended to separate the labor-related area (labor room, delivery room, recovery room, etc.) from the general practice area with the aims to create an environment where delivery is practiced in a comfortable and confident manner.

(2) Considerations of local needs

The waiting area in the existing RHC is not used only for group education for pregnant women and group vaccination for infants, but also for community gatherings. It is also the aim of the Project, in consideration of local customs, to connect two waiting rooms so that they can be used as one large meeting room, when necessary.

(3) Outhouse

Generally, latrines in rural areas are built outside detached from the main facility. The sewage is treated in infiltration septic tank and when the tank becomes full, new tank is installed beside and the toilets are moved. In the Project, similarly, latrines will be installed at the exterior based on an infiltration septic tank which is transferable in the future when it becomes full.

2-2-1-4 Policy on the Construction and Procurement

(1) Building permission and building regulations approval

In Myanmar, the building permission and building regulations approval for a public building is given by the competent authorities, and except for large urban areas, there is no licensing system for a construction project by the government. Although the building plan of RHC will be informed to the respective township by the Ministry of Health via its related offices in the region and the district, it has been confirmed that no further examination will be conducted once the schematic design is approved by the Ministry of Health.

As the engineering department of the Ministry of Construction has indicated that it is preferable to ensure the distance from the outer wall of the building to the site boundary to be over 3 feet (0.91m), this distance will be paid attention in the Project.

(2) Quality and Procurement of Local Materials and Equipment

Except for some equipment and electrical appliances, most materials and equipment for construction are widely available in the local markets. They are either made in Myanmar or imported from Thailand or China mainly through local agents. As particular problem is not found with the quality of these materials and equipment for construction, it is the intention in the Project to use locally procured materials and equipment as much as possible.

(3) Local Labor

Generally, the working hours at construction sites in Myanmar are from 9 o'clock in the morning to 5 o'clock in the afternoon. Because of the lack of regulations in this regard, however, site work is also performed in night times to shorten the construction period. The majority of the Project sites are located in the center of villages. In order not to bring noise to the neighbourhood or to cause light pollution to the farming area, the working hours in the Project are set from 9 o'clock in the morning to 5 o'clock in the afternoon and the Terms of Work will be set-up accordingly.

Skilled labors for construction works are not available in Magway region. They are only available in big cities such as Yangon, Naypyidaw, and Mandalay where construction market is active nowadays. Consequently, skilled labors for the construction works of the Project will be recruited from these cities.

2-2-1-5 Policy on Local Contractors

Traditionally, construction works have been carried out by the state-owned construction enterprises in Myanmar. Because of the privatization of construction companies in the past 10 years, however, their number has increased. Although a number of large development projects through foreign investment are expected in Yangon, the domestic construction market has been limited to small scale developments, while governmental public works are centered on Naypyidaw. And the development projects in Mandalay are taken mostly by the Chinese contractors. Particularly, the governmental public works centered on Naypyidaw have brought about a new local construction method which is the combination of the traditional method and the modern method using new materials. The construction works using this new method allows not a few local contractors with technical capability and machinery to work for a Japanese construction company. This new method has also been adopted as a standard specification by the Ministry of Health. With a view to making a maximum use of local contractors, this new method will be preferentially adopted.

2-2-1-6 Policy on Capabilities of Operation and Maintenance

Full time staff in charge of operation and maintenance of facilities will not be stationed at each facility. For this reason, it is the policy in the Project to adopt equipment and appliances currently under use in the existing facilities and their related facilities, which are easy to operate and maintain. In addition, equipment and appliances attached to the facilities which require daily maintenance will be selected preferentially based on the ease to get access to spare parts and consumables so as that the

operation and maintenance costs may not become a heavy burden.

The medical equipment to be supplied to the new RHCs and SHCs will be the same as the equipment currently used by health staff or the equipment easy to operate, while the equipment to be supplied to TSHs and STHs will be preferentially selected in conformity with the handling ability of the existing medical staff.

It should be noted that at the time of delivery of the equipment, local medical equipment technicians employed by the equipment supplier are to give initial instructions on the use and maintenance method of the equipment to existing medical staff and doctors in order to ensure correct and safe use

2-2-1-7 Policy on the Grade of Facilities and Equipment

The grade of facilities will be based on the standard design adopted by the Ministry of Health and will be set preferentially in consideration of the prevention of in-hospital infection, ease of use, easy maintenance and durability. In addition, the design of each facility including the corridor width, room size, etc. will conform to the standard design of the Ministry of Health.

The grade of equipment will be based on the ease of operation by the in-service medical staff and the availability of management and maintenance through the manufacturer's agents in Yangon. The equipment to be provided to the RHCs will include a set of equipment which is considered minimally necessary for providing the services of facility birth, attention to general outpatient and outreach activities, while the equipment to be provided to the SHCs will include a set of equipment which is considered minimally necessary for providing the services of outreach activities. Similarly, the equipment to be provided to the TSHs and STHs will include a set of equipment which is considered minimally necessary for providing services especially for maternal and child health services, for surgery, delivery and newborn babies as referral hospitals.

2-2-1-8 Policy on the Terms of Work

Construction works will be completely ceased during New-Year's week for about 10 days in the middle of April. In addition, there are some sites to which construction materials and equipment cannot be delivered by construction vehicles for 2 to 5 months during the rainy season between May and October. Therefore, it will be essential to plan the construction period taking into consideration these circumstances including the timing of commencement of works and securing of construction materials and equipment at materials yards or construction sites.

2-2-2 Basic Plan (Construction Plan/Equipment Plan)

2-2-2-1 Examination of the Contents of the Request

(1) Study of Request

At first the request from the GOM was the construction and improvement of RHCs and SHCs and the provision of equipment in Magway region aimed to improve the maternal and child health, and the

basic health care services in rural areas. On the basis of the contents of the request, it was determined that it is necessary to enhance improvement in services, not only of the RHCs and SHCs, but also of STHs and TSHs for the purpose of an overall improvement in maternal and child health services.

The Project consists of providing new buildings and equipment to the RHCs to be newly constructed, a set of equipment for delivery assistance to the existing RHCs and a set of equipment for midwifery which is required to develop outreach activities to the SHCs, while STHs and TSHs will be provided with a set of equipment related to surgery, delivery and newborn babies.

Table 2-6 Summary of the Contents of the Project

<table>
<tr><td colspan="4">Contents of the Project</td></tr>
<tr><td>Construction</td><td colspan="3">(1)Construction of Rural Health Centers (RHCs) ;Reinforced concrete, one story building
<table>
<tr><td colspan="2">Description</td><td>Floor Area (m^2)</td><td>No. of buildings</td></tr>
<tr><td colspan="2">Standard type</td><td>198</td><td>29</td></tr>
<tr><td>Rooms</td><td>HA room, Storage room, PHS room, Clinic, Labor room, Delivery room, Recovery room, Midwife room, LHV room, Waiting area</td><td></td><td></td></tr>
<tr><td colspan="2">Raised floor type</td><td>188</td><td>4</td></tr>
<tr><td>Rooms</td><td>HA room, Storage room, PHS room, Clinic, Labor room, Delivery room, Recovery room, Midwife room, LHV room, Waiting area</td><td></td><td></td></tr>
<tr><td colspan="3">Total</td><td>33</td></tr>
</table>
(2) Ancillary facilities
• Electrical works: Power generator, lighting and receptacle, lightening protection, etc.
• Plumbing and Sanitary: Sanitary appliance, water supply, drainage, etc.</td></tr>
<tr><td rowspan="10">Equipment</td><td rowspan="8">1) RHC</td><td>• Outpatient Examination
Medical Staff Desk & Chair, Patient Stool, Examination Table, Examination Lamp, Sphygmomanometer, Stethoscope, Diagnostic Set, Medicine Cabinet, Boiling Sterilizer, etc</td></tr>
<tr><td>• MW. Obs. Consultants
Medical Staff Desk & Chair, Sphygmomanometer, Stethoscope, Fetus Stethoscope, Obstetric Examination Set, Midwife Kit, etc.</td></tr>
<tr><td>• Labor Room
Labor Bed, Working Table, etc.</td></tr>
<tr><td>• Delivery Room
Delivery Table, I.V. Stand, Examination Lamp, Delivery Instrument Set, Infant Treatment Table, etc.</td></tr>
<tr><td>• Recovery Room
Recovery Bed, Baby Cot</td></tr>
<tr><td>• Health Assistant Room
Desk & Chair, Health Assistant Kit, etc.</td></tr>
<tr><td>• Lady Health Visitor Room, Public Health Supervisor Room
Desk & Chair, LHV/Midwife Kit, PHS Kit, etc.</td></tr>
<tr><td>2) SHC</td><td>Midwife Kit</td></tr>
<tr><td>3) TSH</td><td>Operating Lamp (mobile), Operating Table, Infant Incubator (open type warmer), Phototherapy Unit, Autoclave（electric), Delivery Table, Labor and Recovery Bed, Caesarean Operation Instrument Set, Suction Unit, Oxygen Generator, etc.</td></tr>
<tr><td>4) STH</td><td>Operating Lamp (mobile), Operating Table, Infant Incubator (open type warmer), Phototherapy Unit, Autoclave（non electric), Delivery Table, Labor and Recovery bed, Caesarean Operation Instrument Set, Suction Unit, Oxygen Generator, etc.</td></tr>
</table>

(2) Project sites and layout of the facilities

Nine townships and 33 sites are the subject of the Project. As the lands available for them are

diverse, the following points have been taken into consideration.

1) To locate the facilities in the East-West axis to mitigate insolation and to allow for effective ventilation.

2) To preferentially locate them in legible places.

3) To locate them on a flat and easily-accessible place to avoid reclamation works to be borne by the Myanmar side.

4) To arrange new facilities by leaving the existing buildings and trees intact. Where it is difficult to do so for securing the necessary land, the removal of the existing buildings and trees shall be taken care of by the relevant communities.

In many cases, medical staffs working for RHC live in the housing built within the RHC premises. As these housings are made of bamboo, as generally seen in the rural areas in Myanmar, they are easily removed and moved to other places.

2-2-2-2 Architectural Plan

(1) Concept of floor planning

A new standard design was examined to solve the current problems on the basis of the standard design of MOH. In the standard design of MOH, the delivery section and the general examination section share the waiting area, where infection between expecting mothers and general patients may spread. Under the circumstances, the following plan was designed in consideration of the prevention of in-hospital infection :

1) To provide a separate and independent entrance and waiting room for the delivery section and the general examination section. And to provide a hall exposed to ambient air between the two sections for the prevention of in-hospital infection.

2) To provide access through a terrace.

3) To install a western-style toilet in a room attached to the labor room which will be less burdensome for expecting mothers.

4) To arrange a squat-style toilet and a washing place in the same corner in order to streamline the water supply and drainage pipes.

(2) Plan of each section

- Delivery section

  In this section, antenatal consultations and delivery are practiced. In order to prevent maternal and neonatal infection in the facilities, this section is separated from the general examination section by means of a terrace / hall, and a separate and independent waiting room for the section will be

provided. It is also the intention of the Project to consider the privacy of the expecting mothers and the delivery room will be provided in the most remote place from the general examination section, accordingly.

Table 2-7 Rooms in Delivery Section

Room	Floor Area (m^2)	Role and Function
Labor room	13	Neonatal attention is given. Labor bed, treatment cart, working table and medicine shelf will be installed.
Delivery room	12	Delivery table, examination lamp, IV stand, table for neonatal treatment, treatment cart, etc, will be installed. A place reserved for family will be secured.
Recovery room	7	Bed and cot for newborn baby after delivery will be installed.
Staff room (midwife)	7	One midwife is at standby. A bed will be provided and a place required for checking expecting mothers will be secured.
Waiting room (delivery)	30	This room will be used as a waiting area in the delivery section.
Toilet attached to labor room	3	To be exclusively used for expecting mothers and a western-style stool will be provided.
Total	72	

- General examination section

  This section will consist of the general examination room and general treatment, a waiting room, the administration office for healthcare staff and storage to store medicines and equipment.

Table 2-8 Rooms in General examination section

Room	Floor Area (m^2)	Role and Function
General examination room	13	Examination and treatment with a patient lying on a bed is practiced and measurements of height and weight are taken.
Staff room (HA)	12	One staff will be on duty. For the head administrator of a RHC, a storage rack for keeping documents will be installed. Office area will be secured.
Staff room (LHV)	7	One staff will be on duty. Although the roles of a LHV mainly consist of outreach activities, arrangements will be made for the storage of necessary equipment. Office area will be secured.
Staff room (PHS)	7	One staff will be on duty. Office area will be secured.
Waiting room (general practice)	30	This room will be used as a waiting area in the general examination section.
Storage	6	Arrangements will be made for the storage of medicine and other necessary materials.
Total	75	

- Common Area

  At the center of the building between the delivery section and the general examination section, a hall exposed to ambient air will be provided for the purpose of allowing natural air circulation. The planning allows the doors facing the hall to be opened and the connected two waiting rooms to be a large meeting room, when the place is used for an occasion of the village.

  It is the custom in Myanmar for family to accompany their member when he or she falls ill and

attend him or her by taking care of food, etc., therefore an area for washing and cooking will be provided. The toilet will be installed in a place away from the medical use area and exposed to the ambient air as much as possible.

Table 2-9 Common Area

Room	Floor Area (㎡)	Role and Function
Hall	24	Waiting room for patients, sometimes used for events in the village.
Washing Room	3	Patients and their families can wash and cook, a sink to be installed.
Generator Room	2	3kVA generator's to be installed.
Toilet	3	WC for staff and patients. To install a squat-style toilet.
Corridor, etc.	18	
Total	51	

(3) Section Plan

Securing of natural ventilation and natural lighting, cutting off direct sunlight and prevention of rainwater's sneaking into the building are to be considered. The ceiling height is to be over 3.65m (12 feet) in accordance with the standard of MOH, which is sufficient to make the comfortable indoor environment with natural air circulation.

(4) Design of Structure Plan

1) Soil Condition

According to the geological survey result, the layer of 1.0m below the ground level has an allowable bearing capacity at almost every site. Therefore, it is appropriate to adopt the spread foundation structure about 1.0m below the ground level for easy construction. As geological conditions of each site is diverse, design study should be done for every Project site.

2) Superstructure Plan

The superstructure of the new facilities is to be a reinforced-concrete rigid frame structure with brick walls which is widely adopted in Myanmar. Exterior walls are to have 240mm thickness double brick walls, and interior walls are to have 120mm thickness single brick walls.

3) Condition of Structural Design

The load and the external force adopted in the Project are set as the followings in consideration of the local weather, earthquakes, the standard and the building use.

- Dead Load
  It is calculated according to each finishing and construction material used in the Project.

- Live Load
  It adopts the numerical numbers as follows in accordance with the Myanmar building code and the building standards in Japan.

Examination, Delivery Room, Recovery Room, MW Office : 3,900 N/m^2

- Seismic Load

  It is calculated according to the map of the earthquake zoning in Myanmar as Strong Zone III.

4) Materials to be used

Concrete: Design basis strength Fc = 21N/mm^2
Reinforcing bar: Yield strength 345N/mm^2, 295 N/mm^2
Cement: Normal portland cement

(5) Electrical Facility Plan

1) Power Supply

In 14 sites, electrical power is supplied. Concretely, 2 sites are supplied from the public power lines, 10 sites from generators owned by the villages and temples, etc. and 2 sites from a small hydraulic power generator. The power supply, however, is heavily restricted as far as the time and date of use is concerned. Under the circumstance, a generator (3kVA x 1) will be provided in order to respond to emergencies and nighttime deliveries, etc.

Table 2-10 Types of electricity and supply situation

Type of electricity	No. of sites	Supply situation
Public power lines and commercial electricity	2	(1) Only during night, once in three days (2) For two hours only during night
Generators of villages and/or temples	10	For about two hours during night
Small hydraulic generator	2	Only supplied during night. Power supply is suspended in dry season.
Not available	19	

2) Generator

Use of electricity supplied by the generator will be as follows.

- Illumination: Each room will be provided with 1 to 4 LED lamps and the waiting rooms with 8 LED lamps.
- Outlet: Each room will be provided with 1 outlet.
- Electric feed water lifting pumps (to be used for pumping water from the water receiving tank to the elevated tank).

3) Communication Facilities

Since all the RHC staffs have GSM mobile phones and all the communications including a referral in emergency are conducted using the mobile phones, no communication facilities will be provided.

4) Lightning Protection Facilities

Because of a number of squalls accompanied by lightning falls in the rainy season, lightning strikes occur frequently in Magway region. A lightning protection system for the protection from lightning strikes will be installed on the roof of each building.

(6) Mechanical Facilities

1) Water supply Facilities

The water source for each RHC varies including surface water, rainwater, shallow well and deep well. Except for the 4 sites where a deep well + an elevated water tank are available, a receiving tank is disposed on the ground to pump water to an elevated tank in order to distribute water to toilets and a washing place.

In RHCs where arsenic and lead contamination are found and exceed WHO standard, only water supply pipes to water outlet are provided but faucets are not installed to avoid from miss-drinking unless safety water is secured by conducting proper treatment by the Myanmar side.

Table 2-11 Water quality survey result

Parameter	RHCs where contaminations are found and exceed WHO standard
Arsenic （0.01ｍｇ/ℓ）	Pakokku112(3)(0.060mg),Salin60(1) (0.012mg)
Lead （0.01ｍｇ/ ℓ）	Pakokku112(0.0119mg):,115(0.0109mg):, SeikPhyu145(0.0105mg),146(0.0182mg),147(0.0166mg),144(3)(0.0166mg), Pauk138(0.0112mg) ,Myaing132(0.0123mg), Ya Sa Gyo122(0.0155mg) 123(0.0145mg), 125(0.0151mg),127(0.0132mg), Sa Lin54(3)(0.0126mg),58(1)(0.0104mg),60(1)(0.0114mg) Saw163(0.0117mg),166(0.0158),167(0.0245mg), Say Toke Ta Ya72(0.0161mg),73(0.0115mg) Nat Maut31(0.0126mg)

A ready-made stainless steel tank will be used for use as an elevated water tank.

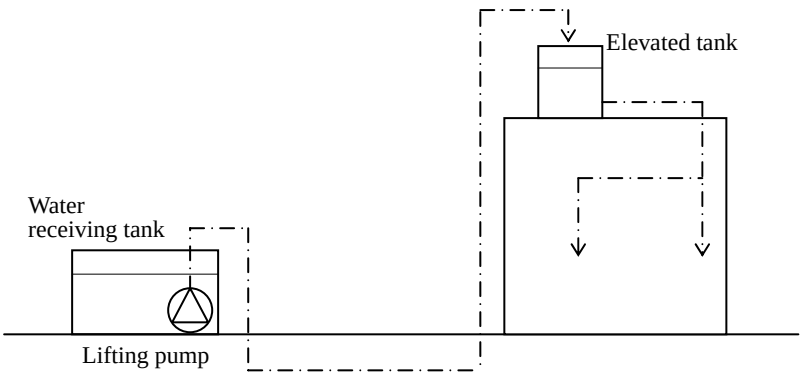


Fig. 2-1 Schematic View of Water Supply

○ Estimated Water Supply

Capacity of the elevated water tank: Effective for 1.5m^3
(When stored for 3 days, at a use rate of 500ℓ / per day)

Staff : 5 people x 60ℓ /day-person (※1)	=	300 ℓ / day
Patients: 10 people x 5ℓ /day-person (※2)	=	50 ℓ / day
Accompanying people: 30 people (per patient) x 5ℓ/day-person	=	150 ℓ / day
Total	=	500 ℓ / day

※1: Clinic – Doctors and nurses - 110ℓ /day-person x 50 % ≒ 60ℓ /day-per person

※2: Clinic – Outpatients - 10ℓ /day-person x 50 % ≒ 5ℓ /day-per person

(Refer to the "Design Criteria for Building and Equipment" prepared by the Equipment/Environment Section of Maintenance Department attached to the Cabinet Office of the Minister of Land, Infrastructure and Transportation, version 2009, for the unit amount)

Table 2-12 Plumbing works depending on water sources

Water source	Works to be undertaken by the Japanese government
• Shallow wells • Water collected from common well of the village, pond, and river • Water supply from the neighbouring wells(common wells and from temples)	A water receiving tank with a storage capacity of 2m^3 and a lifting pump will be installed and water will be pumped up through toughened polyvinyl chloride pipes (VP) to the newly installed elevated tank with a storage capacity of 2m^3. The piping route varies depending on the site.
Deep well + Elevated tank	Water will be drawn from the existing elevated tank to the new facility

2) Sanitary Facilities

- A western-style toilet will be installed next to the labor room, while a squat-style toilet will be installed outside of the facility.

3) Drainage Facilities

No public drainage system including drainage ditches and drainage facilities is available either within the Project site or in the neighbouring villages.

- In accordance with the standard specification of MOH, a holding tank (capacity for 20 people) will be installed for infiltration.
- Wastewater will be discharged into the holding tank.
- No measures will be taken for storm water within the premises, in the same manner as the present situation

.

(7) Construction Material Plan

1) Basic policy

1. Construction materials will be procured locally as many as possible in order to make the construction costs reasonable and shorten the construction period.

2. Materials which are adapted to the local climate, highly weather-resistant, and easy to maintain will be selected in order to reduce the maintenance costs.

3. Materials which are sanitary and durable will be used as RHCs are healthcare facilities.

2) Materials

1. Structural Materials

In recent years, in the rural areas of Myanmar, building frames made of reinforced concrete frame and brick walls are combined with steel framed roof. Similarly, in the Project, the combined method will be used for building works of the Project.

2. Exterior finishing material

Table 2-13 shows the main materials used for external finishing.

Table 2-13 Exterior Finish Material

Component	Material used	Remarks
Exterior wall	Painted on cement mortar	Common in the local and durable
Roof	Steel framed roof on veneer boards + thermal insulation + metallic roofing	High regard for durability and thermal insulation
Exterior Fixture	Aluminum fittings	High regard for being durable and water-resistant.

3. Interior finishing material

Table 2-14 shows the materials used for the interior of the main rooms.

Table 2-14 Interior Finish Material

Room	Floor	Wall	Base board	Ceiling	Remark
HA, LHV and PHS rooms	Tile	Cement mortar + paint finish	Tile	Gypsum board + paint finish	High regard for durability and cleanability
Examination room	Tile	Cement mortar + paint finish	Tile	Gypsum board + paint finish	High regard for durability and cleanability
Labor room	Tile	Tile (up to H1500) / paint finish	Tile	Gypsum board + paint finish	High regard for durability and cleanability
Delivery room	Tile	Tiling (up to H1500) / paint finish	Tile	Gypsum board + paint finish	High regard for durability and cleanability
Recovery room	Tile	Cement mortar + paint finish	Tile	Gypsum board + paint finish	High regard for durability and cleanability
Midwife room	Tile	Cement mortar + paint finish	Tile	Gypsum board + paint finish	High regard for durability and cleanability

Waiting area	Tile	Cement mortar + paint finish	Tile	Gypsum board + paint finish	High regard for durability and cleanability
Toilet	Tile	Tiling (up to H1500) / paint finish	Tile	Direct ceiling	High regard for durability and cleanability
Corridor	Tile	Cement mortar + paint finish	Tile	Gypsum board + paint finish	High regard for durability and cleanability
Storage		Cement mortar + paint finish	Tile	Gypsum board + paint finish	High regard for durability and cleanability

2-2-2-3 Equipment Plan

(1) Overall Plan

The equipment plan for the Project aims to upgrade medical equipment at the targeted primary medical facilities such as RHCs/SHCs which mainly provide primary heath care services (including outreach activities, care and treatment) and secondary level health facilities such as TSHs and STHs.

Targeted health facilities are: 49 RHCs, 281 SHCs, 9 TSHs, and 15 STHs

The medical equipment to be supplied is as follows:

- RHCs:
  Medical equipment for general examination, prenatal and delivery services and outreach activities
- SHCs:
  Medical equipment for outreach activities
- TSHs:
  Medical equipment focused on maternal and child health needed at TSH level medical facilities
- STHs:
  Medical equipment focused on maternal and child health needed at STH level medical facilities

The equipment plan is based on the Minutes of Discussions in which both the Japanese side and the Myanmar side mutually agreed upon at Field Survey. In addition, equipment planning has been designed carefully according to the necessity, appropriateness, the technical level of doctors and medical staffs, and the recurrent cost.

The equipment plan for the all facilities is as the followings:

(2) Policy of the equipment plan

1) RHCs:

Current situation of RHCs with major medical equipment

- Current available medical equipment are limited to general medical examination such as : Examination tables, Sphygmomanometers, Stethoscopes, Weighing scales, Height scales, Medicine cabinets, Instrument cabinets and Locker cabinets etc.
- There are almost no medical equipment except Delivery tables available related to delivery nor for obstetric examination
- Diagnostic sets for outreach activities are provided.
- Most of the medical equipment has passed its life span over 10-15 years and concerned for its decrepitude. There are urgent needs for renewal.

The medical equipment will be supplied for the two categories of RHCs. One is for 33 of new RHCs and the other is for 16 of existing RHCs. The outline of the medical equipment for the two categories is as follows:

- 33 new RHCs: Equipment for general examination rooms, Equipment for obstetric medical examination, Equipment for delivery rooms, Equipment for HA rooms and Equipment for LHV rooms etc.
- 16 existing RHCs: Equipment for obstetric consultation, Equipment for delivery rooms, Instrument cabinets, Medicine cabinets and Partitions etc.

2) SHCs:

Current situation of SHCs with major medical equipment

- The only available medical equipment is diagnosis set for outreach health services used by Midwife (MW)
- Most items of the existing equipment are decrepit and have defects since they have passed over 10 years when they were procured. There are urgent needs for renewal.

The equipment for SHCs which will be procured in the Project is MW set (portable equipment set including Weighing scale, Stethoscope, Haemostatic forceps, Kidney basin, Thermometer, etc.) for each MW.

3) TSHs:

Current situation of TSHs with major medical equipment related with maternal and child health

- Most of the medical equipment has passed its life-span and no renewal of the equipment has not been implemented
- Most sophisticated medical equipment used for operation theaters is especially concerned for its decrepitude. Some items have passed over 30 years of their life-span.
- Most of the medical equipment for the delivery rooms has defects because of decrepitude
- Some items of equipment such as Phototherapy units needed for newborn infant are not available at TSHs. Instead, they are treated with hand-made units because of the limitation of budgetary allocation. In order to treat efficiently, current hand-made unit should be urgently changed into effective medical equipment (Phototherapy unit).

In Pakokku, there are no TSHs but instead of them, there is a general hospital (GH) which has higher technical level than TSHs. Since GH is functioning as TSH, the same medical equipment will be supplied to GH.

The outline of improvement of the medical equipment for 9 TSHs is as the followings:

- Medical equipment for operation theater is: Operating lamp, Operating table, Caesarean operation instrument set

- Medical equipment for the delivery rooms is: Infant incubator (warmer), Phototherapy Unit, Suction unit, Vacuum extractor suction (electric and manual), Low pressure continuous suction unit, Autoclave electrical type, Oxygen generator, Delivery table, Labor and recovery bed and Normal delivery instrument set.

4) STHs:

Current situation of STHs with major medical equipment related with maternal and child health

- Most of the equipment passed its life-span and it has not been renewed.
- Decrepit medical equipment used in operation theaters and delivery room causes insufficient medical services.
- STHs require the same degree of the medical services related with maternal and child health care as TSHs, since it takes about an hour to three hours for referring from STHs to TSHs.

It prepares the same degree of equipment as TSHs for STHs, however, Autoclave electrical type and Vacuum Extractor suction using electricity will not be planned in the Project, because the electricity at some villages of rural areas is unstable. Instead of above, the replacement (non-electric equipment) will be planned.

The Project targets 15 of STHs for the following reasons. The Project initially designed for 18 of STHs, however, it came to know that two of those STHs have no doctors assigned and one of those has already upgraded the medical equipment two years ago.

The outline of improvement of the medical equipment is as follow:

- Medical equipment related to operation theater is such as Operating lamp, Operating table and Caesarean operation instrument set, etc.
- Medical equipment related to delivery rooms: Infant incubator (warmer), Phototherapy unit, Suction unit, Manual vacuum extractor suction, Autoclave fuel-heating, Oxygen generator, Delivery table, Labor and recovery bed, and Normal delivery instrument set, etc.

(3) Policy on selection of equipment

In the Project, the necessary equipment (its category, quantity, and grade) is to be selected in accordance with the following criteria:

1) The medical equipment needed in order to support medical services both to RHCs /SHCs for primary health services and to TSHs and STHs which are higher level medical facilities. The medical equipment for TSHs and STHs is especially focused on maternal and child health.

2) Delivery service of RHCs is based on a normal delivery. The equipment for the cases will be planned. The higher level medical facilities, including TSHs and STHs cope with abnormal delivery, a Cesarean operation and premature birth.

3) In principle, the decrepit equipment which is unusable will be replaced.

4) The equipment which will be provided should match current targeted health facilities in technical level.

5) The equipment that the Central Medical Store Department (CMSD) can manage the maintenance itself will be chosen. Even if CMSD is not able to maintain the equipment, it will be selected manageable one at manufacture's agents in Myanmar so that problems will not occur.

6) The equipment will include lighting devices in case of urgent medical examination and delivery services at night

7) The equipment that can have little or no damage to humidity, corrosion and dust will be selected considering the subtropical climate in Myanmar such as high temperature and humidity

8) Consumables and spare parts will be of 9 months considering the necessary period for the Myanmar side to familiarize with the actual operations such as delivering, placing order and stock management.

9) If the equipment regularly requires consumables and spare parts, the one which manufacture's agents are available in neighbouring countries such as Thailand and Singapore, etc. should be selected.

(4) Examination of the requested equipment

The examination has been done with the contents of medical service activities, current availabilities of equipment, frequency of the usage and grade of equipment. Figure 2-14 shows the results of the examination. The appendices will include "Medical Equipment" and "Specification and purpose of use of major equipment".

1) Classification of procurement

- Replace : Function deteriorated due to obsoleteness
- Add : Quantitative shortage
- New : Equipment related to new medical services

2) Rationality

○ : Equipment matches with the medical service activities at targeted facilities
× : Equipment does not match with the medical service activities at targeted facilities

3) Necessity

○ : Equipment which is necessary to the medical services at the targeted facilities
× : Equipment which can be substituted by other existing equipment or has limitation of benefits

4) Technical level

○ : Operation is possible in the current technical level
× : Equipment which requires special and/or advanced technical training additionally

5) Operation system

○ : Equipment whose medical staff are properly allocated or expected
× : Equipment whose medical staff are not expected to be allocated

6) Maintenance system

○ : Equipment for which maintenance resource are available including supplies of spare parts and consumables with manufacturer’s agents and so
× : Equipment for which maintenance resources are not available including supply of spare parts and consumables with manufacturer’s agents and may cause difficulties to maintain the equipment

7) Maintenance costs

○ : Maintenance costs are not so high
× : Maintenance costs will be high and it may cause some difficulties

8) Overall evaluation

○ : Procurement will be appropriate considering the above-mentioned conditions
× : Procurement will be inappropriate considering the above -mentioned conditions

(5) Medical equipment

The followings are the planned medical equipment based on Examination of requested equipment.

Table 2-15 Examination of requested equipment

Facility	Department/ Section	Equipment	Procurement	Rationality	Necessity	Technical Level	Management System	Maintenance System	Maintenance	Evaluation	Remarks
Township/Station Hospital											
	obstetrics Section	Operating Lamp, Mobile	Replace	○	○	○	○	○	○	○	
		Infant incubator (Closed type)	New	○	○	X	X	X	X	X	Non personnel availabel
		Infant incubator (open type warmer)	Replace	○	○	○	○	○	○	○	
		Autoclave electorical type	Replace	○	○	○	○	○	○	○	
		Ultrasound Scanner	New	○	○	X	X	X	○	X	Non personnel availabel
		Electro Surgical Unit	New	○	○	X	X	X	○	X	Non personnel availabel
		Suction Unit (electric)	Replace	○	○	○	○	○	○	○	
		Caesarean operation Instrument Set	Replace	○	○	○	○	○	○	○	
		Delivery Table	Replace	○	○	○	○	○	○	○	
		Normal Delivery Instrument Set	Replace	○	○	○	○	○	○	○	
		Labor and Recovery bed	Replace	○	○	○	○	○	○	○	
		Operating Table	Replace	○	○	○	○	○	○	○	
		Phototherapy Unit	Replace	○	○	○	○	○	○	○	
		Autoclave Charcoal	Replace	○	○	○	○	○	○	○	
		Low Pressure continuou suction unit	Replace	○	○	○	○	○	○	○	
		Vaccum Extractor suction manual	Replace	○	○	○	○	○	○	○	
		Vaccum Extractor suction electric	Replace	○	○	○	○	○	○	○	
		Oxgen Generator	Add	○	○	○	○	○	○	○	
RHC (Rural Health Center)											
	Outpaitent Examination	Medical Staff desk & chair	Replace	○	○	○	○	○	○	○	
	Room	Patient Stool	Add	○	○	○	○	○	○	○	
		Examination Table	Replace	○	○	○	○	○	○	○	
		Examination Lamp	Replace	○	○	○	○	○	○	○	
		Sphygmomanometer	Replace	○	○	○	○	○	○	○	
		Stethoscope	Replace	○	○	○	○	○	○	○	
		Diagnostic Set	Replace	○	○	○	○	○	○	○	
		Treatment Instrument Set	Replace	○	○	○	○	○	○	○	
		Treatment Trolley	Replace	○	○	○	○	○	○	○	
		height Scale	Replace	○	○	○	○	○	○	○	
		Weighing Scale	Replace	○	○	○	○	○	○	○	
		Instrument Cabinet	Replace	○	○	○	○	○	○	○	
		Medicine Cabinet	Replace	○	○	○	○	○	○	○	
		Ward Screen	New	○	○	○	○	○	○	○	
		Clothes basket	Replace	○	○	○	○	○	○	○	
		Boiling Sterilizer、charcoal heating	Replace	○	○	○	○	○	○	○	
	MW.Obs. Consultants	Desk & chair for MW	Replace	○	○	○	○	○	○	○	
		Examination Table	Replace	○	○	○	○	○	○	○	
		Sphygmomanometer	Replace	○	○	○	○	○	○	○	
		Stethoscope	Replace	○	○	○	○	○	○	○	
		Treatment Trolley	Replace	○	○	○	○	○	○	○	
		Fetus Stethoscope	Replace	○	○	○	○	○	○	○	
		Obstetric Examination Set	Replace	○	○	○	○	○	○	○	
	Midwife	Midwife Kit	Replace	○	○	○	○	○	○	○	
	First Stage Delivery	Treatment Trolley	Replace	○	○	○	○	○	○	○	
	Room	Medicine Cabinet	Replace	○	○	○	○	○	○	○	
		Working Table	New	○	○	○	○	○	○	○	
		Labor and Recovery bed	Replace	○	○	○	○	○	○	○	
	Delivery Room	Examination Lamp	Replace	○	○	○	○	○	○	○	
		Treatment Trolley	Replace	○	○	○	○	○	○	○	
		Working Table	Replace	○	○	○	○	○	○	○	
		Delivery Table	Replace	○	○	○	○	○	○	○	
		I.V. Stand	Replace	○	○	○	○	○	○	○	
		Delivery instrument set	Replace	○	○	○	○	○	○	○	
		Infant Treatment Table	Replace	○	○	○	○	○	○	○	
		Infant Weighing Scale	Replace	○	○	○	○	○	○	○	
		Examination Lamp with solar battery	New	○	○	○	○	○	○	○	
	Post Delivery Room	Labor and Recovery bed	Replace	○	○	○	○	○	○	○	
		Bayby Cot	Replace	○	○	○	○	○	○	○	
	Lady Health Vistor	Desk & chair for LHV	Replace	○	○	○	○	○	○	○	
	Room	Locker Cabinet	Replace	○	○	○	○	○	○	○	
		LHV/Midwife Kit	Replace	○	○	○	○	○	○	○	
	Public Health	Locker Cabinet	Replace	○	○	○	○	○	○	○	
	Supervisor Room	Desk & chair for PHS	Replace	○	○	○	○	○	○	○	
		PHS Kit	Replace	○	○	○	○	○	○	○	
	Health Assistant	Desk & chair for HA	Replace	○	○	○	○	○	○	○	
	Room	Locker Cabinet	Replace	○	○	○	○	○	○	○	
		Health Assistant Kit	Replace	○	○	○	○	○	○	○	
	Store	Locker Cabinet	Replace	○	○	○	○	○	○	○	
SHC (Sub-Rural Health Center)											
	Midwife	Midwife Kit	Replace	○	○	○	○	○	○	○	

(6) Major equipment

Code No.	Equipment	TSH	STH	RHC New Construction	RHC Existing	SHC	Quant.
		9 sites	15 sites	33 sites	16 sites	281 sites	
1	Operating Lamp, Mobile	9	15				24
2	Infant incubator (open type warmer)	9	15				24
3	Autoclave	9					9
4	Suction Unit	9	15				24
5	Caesarean operation Instrument Set	9	15				24
6	Medical Staff desk & chair			132			132
7	Patient Stool			33			33
8	Examination Table			66	16		82
9	Examination Lamp			66			66
10	Sphygmomanometer			66	16		82
11	Stethoscope			66	16		82
12	Diagnostic Set			33			33
13	Treatment Instrument Set			33			33
14	Treatment Trolley			132			132
15	height Scale			33			33
16	Weighing Scale			33			33
17	Instrument Cabinet			33	16		49
18	Medicine Cabinet			66	16		82
19	Ward Screen			33	16		49
20	Clothes basket			33			33
21	Boiling Sterilizer			33	16		49
22	Fetus Stethoscope			33	16		49
23	Obstetric Examination Set			33			33
24	Midwife Kit			33	16	281	330
25	Working Table			66			66
26	Delivery Table	9	15	33	16		73
27	I.V. Stand			33	16		49
28	Delivery instrument set	9	15	33	16		73
29	Infant Treatment Table			33			33
30	Infant Weighing Scale			33	16		49
31	Labor and Recovery bed	9	15	66	16		106
32	Bayby Cot			33	16		49
33	Locker Cabinet			132			132
34	LHV/Midwife Kit			33	16		49
35	Desk & chair for Health staff			33			33
36	Health Assistant Kit			33	16		49
37	Operating Table	9	15				24
38	Phototherapy Unit	9	15				24
39	Autoclave, Feul Heating		15				15
40	Low Pressure continuou suction unit	9					9
41	Vaccum Extractor suction electric	9					9
42	Vaccum Extractor suction manual	9	15				24
43	Oxgen Generator	9	15				24
44	Examination Lamp with solar battery				16		16
45	PHS Kit			33	16		49
Total		126	180	1584	304	281	2,475

(7) Specification

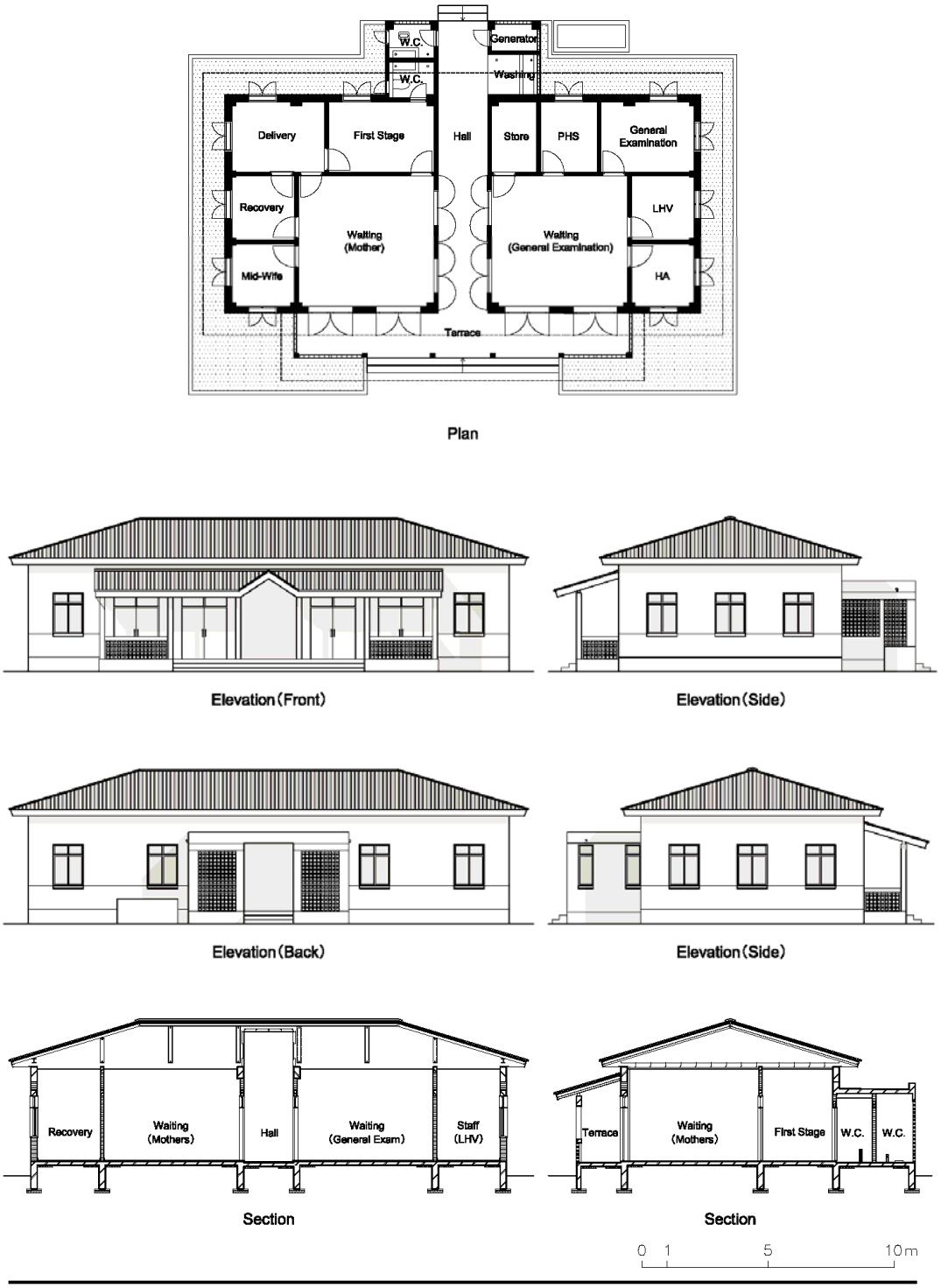
Code No.	Equipment	Procured Country	Country of origin	Major Specification and or Composition	Equipment Level	Unit Price	Quant.	Purpose of using and Validity of Equipment Level
5	Caesarean operation Instrument Set	Japan	Germany	Composition: Cotton holding forceps 220mm, Abdominal retractor 3-blade, Towel forceps 130mm, Operating knife handle No.3 and No.4, Operating knife blade No.10 and No.20, Kocher haemostatic forseps straight 145mm, Pean hemostatic forceps straight 145mm, Kocher hemostatic forseps straight 185mm, etc. Material Stainless steel	Standard	¥709,000	24	Use for emergency cases of abnormal delivery. Equipment are standard grade and generally used with facilities in Myanmar.
24	Midwife Kit	Japan	Japan	Composition: Bathroom scale, Instruments disinfector, Kidney Basin, Sponge bowl, Solution cup, Irrigator, Silicone Medical tubing, Tracheal catheter, Urethral Chatheter solid tip one eye CH10, Urethral Chatheter solid tip one eye CH11, Carrying back, etc.	Standard	¥129,000	330	Use for out reach health services at villages and homes. Equipment are standard grade and generally used with facilities in Myanmar.
26	Delivery Bed	Thailand	Thailand	Bed: 2 section, Main unit and supporting table Trendelenburg: Manual operation 0～40° Material:Stainless Steel (SUS304) Mattless: spong covered Viynl leather Size :1700(L)x650(W)x750(H)mm or more Caster: 125mm, 4 casters, with brake	Standard	US$1,800 (¥144,000)	73	Use for lie in bed delivery. Equipment are standard grade and generally used with facilities in Myanmar.
37	Operating Table	Japan	Japan	Elevation: Manual Oil-hydraulic foot pump Table top size: 1900x450mm or larger Elevation range: 780-950mm or more Trendelenburg: 25°or more Revers trendelenburg : 25°or more Caster : Should be provided	Standard	¥1,024,000	24	Use for surgical operation. To adjust patient position by inclination and or up and down to proper operation position. Object facilities are using same level of equipment so planned model is appropriate grade of equipment.

2-2-3 Outline Design Drawing

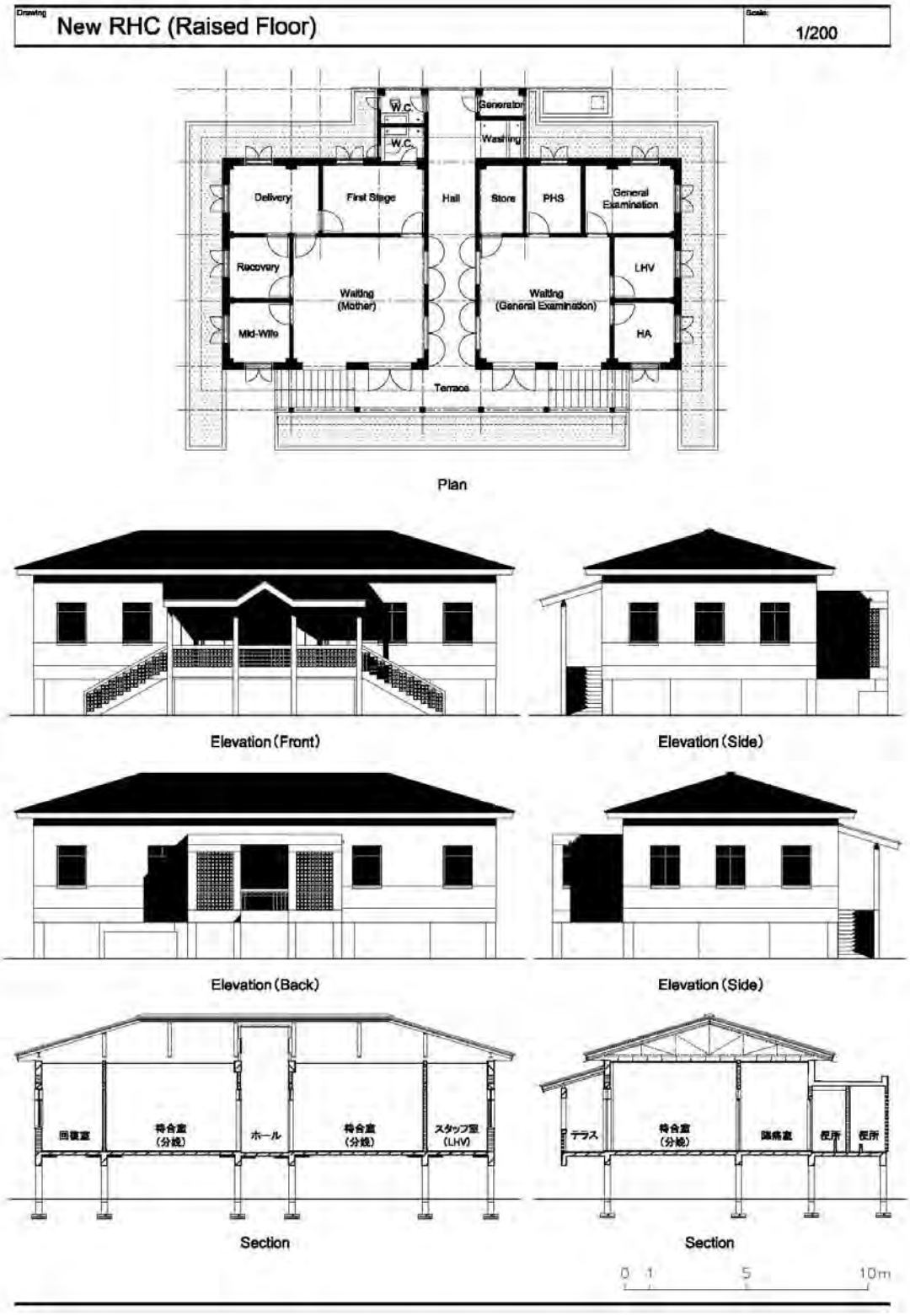
2-2-3-1 Standard Plan

Drawing

New RHC

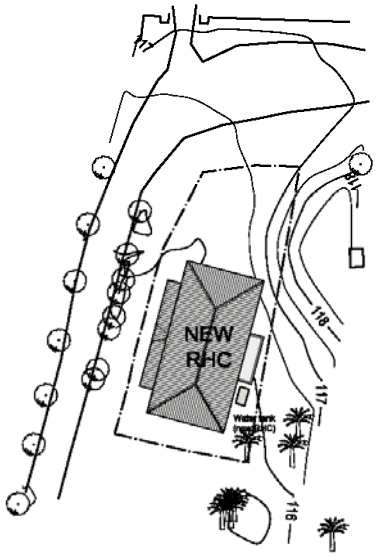


2-2-3-2 Raised Floor Plan



Site Plan

RHC No.	Township:	RHC Site:	
112	PAKKOKU	Lay Taying	



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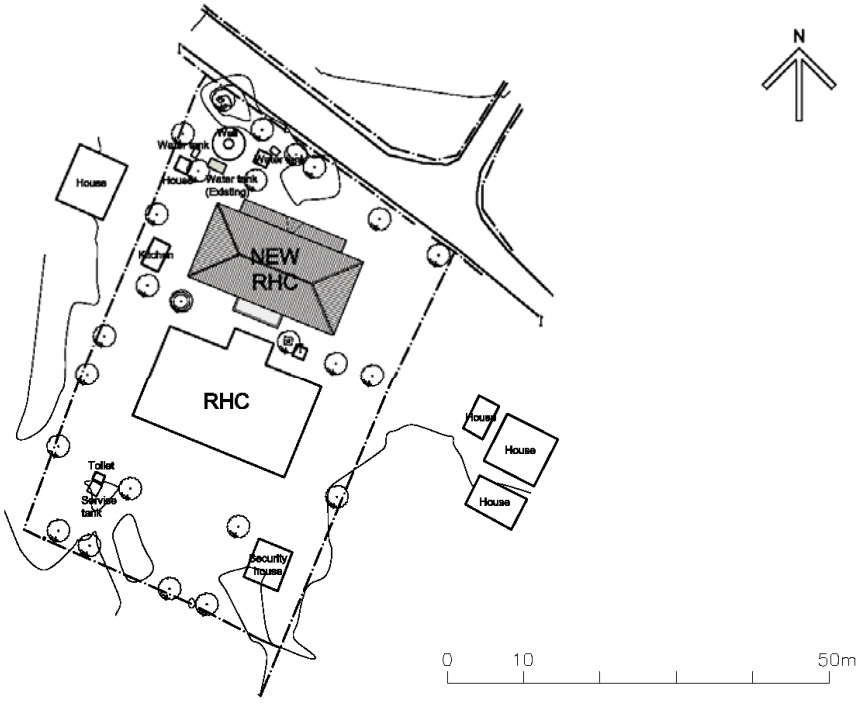
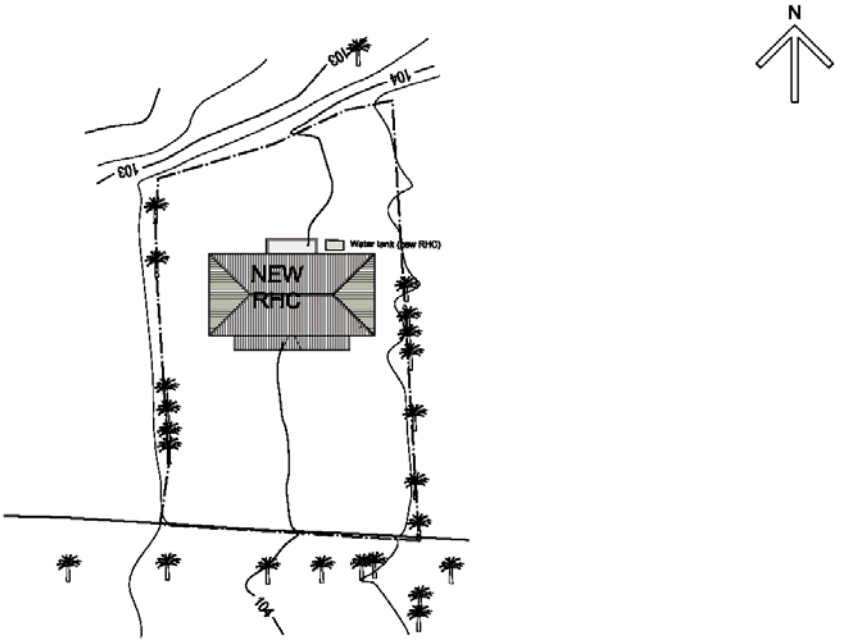
115	PAKKOKU	Ywa Thit Kone	



RHC No.	Township:	RHC Site:	
112(3)	PAKKOKU	Taungpalu	



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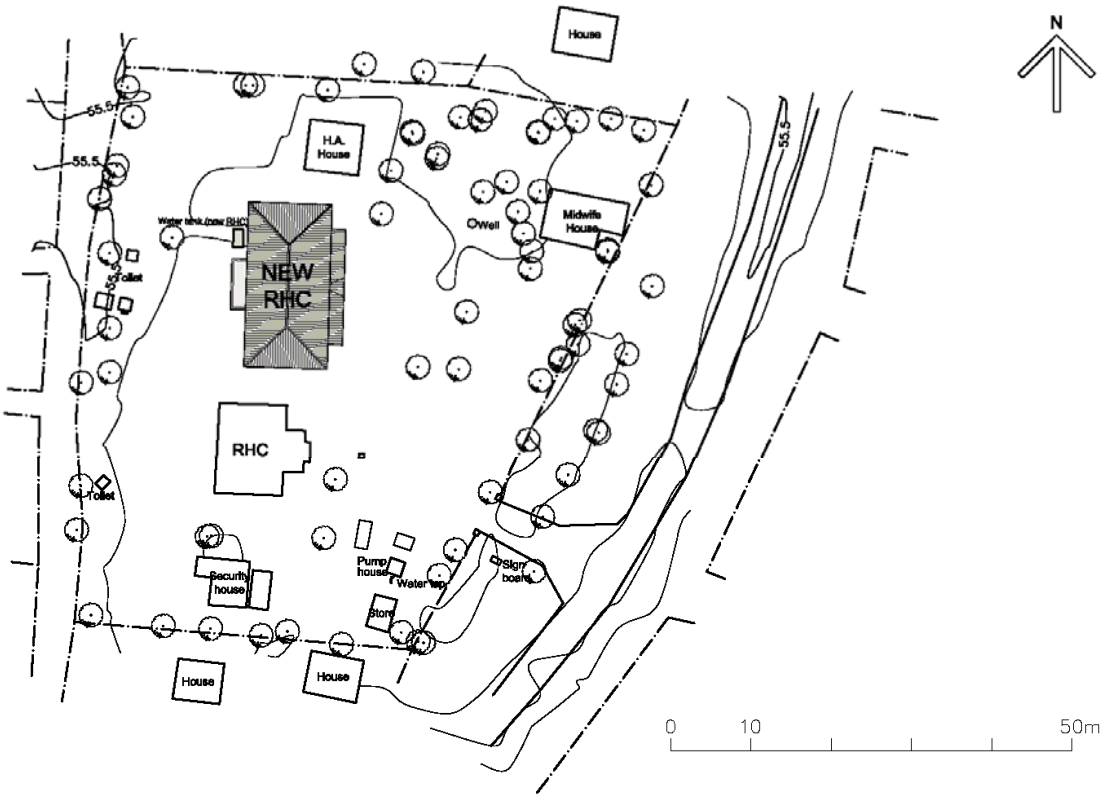
145	SEIK PHYU	Auk Seik	



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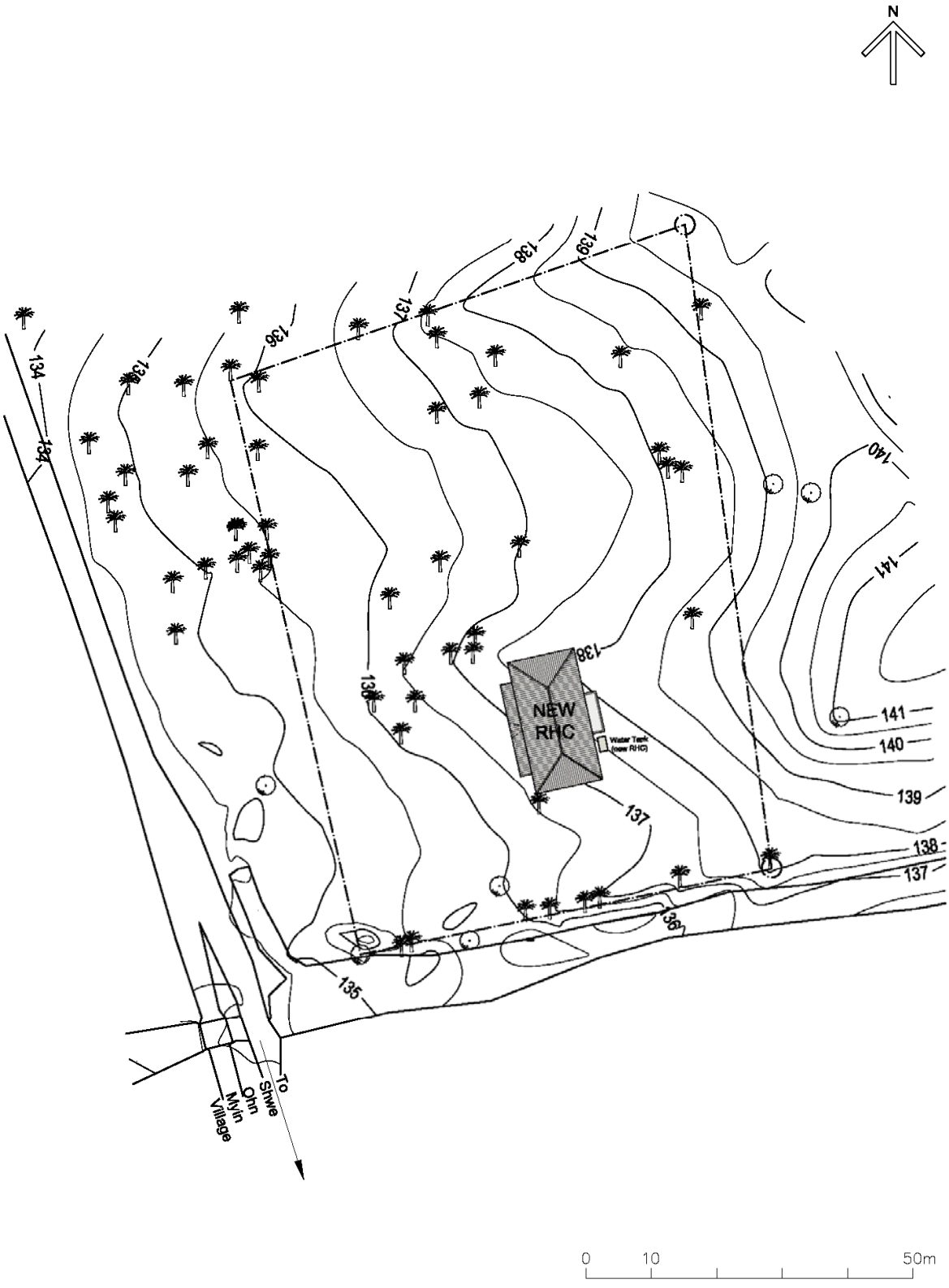
146	SEIKPHYU	Lat Seil	



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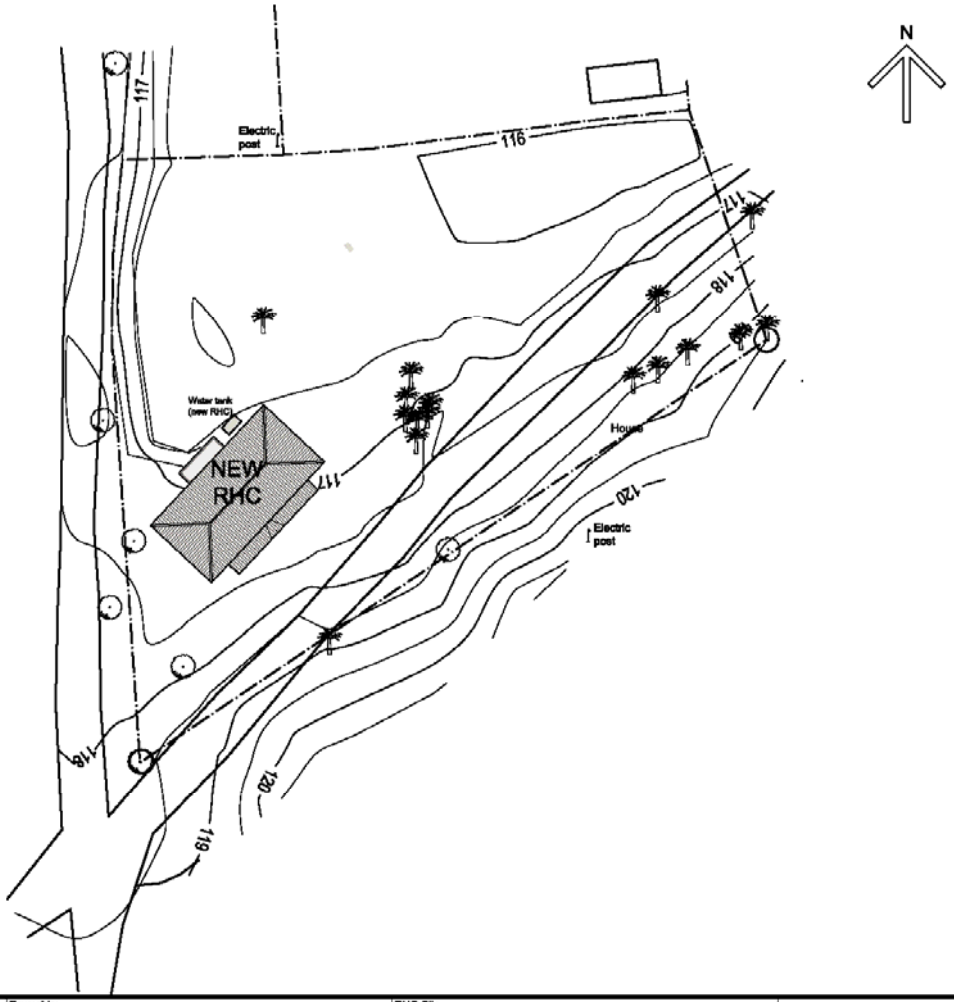
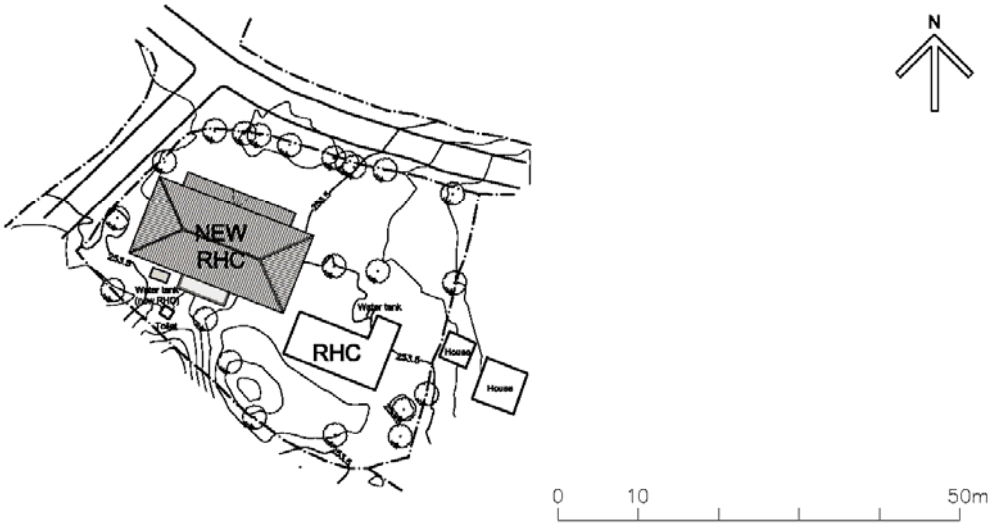
147	SALIN	Inn Gan	



RHC No.	Township:	RHC Site:	
144(3)	SEIKPHYU	Kyaung Yuan	



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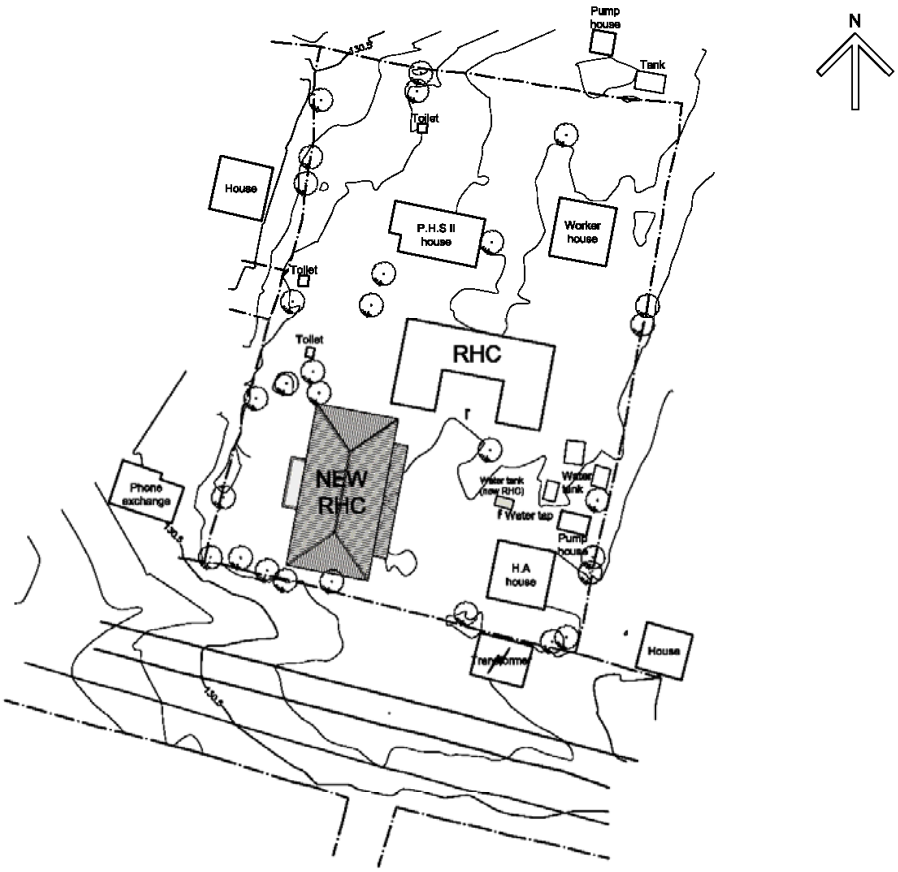
138	PAUK	Kauk Tang Gin	

RHC No.	Township:	RHC Site:	
139	PAUK	Ye Bya	



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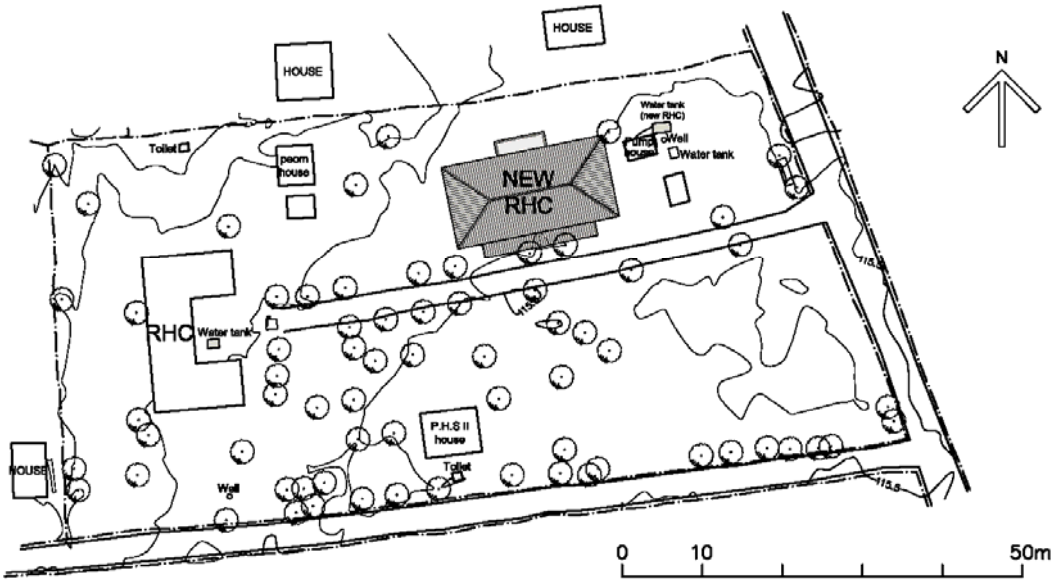
140	PAUK	Nant Thar	



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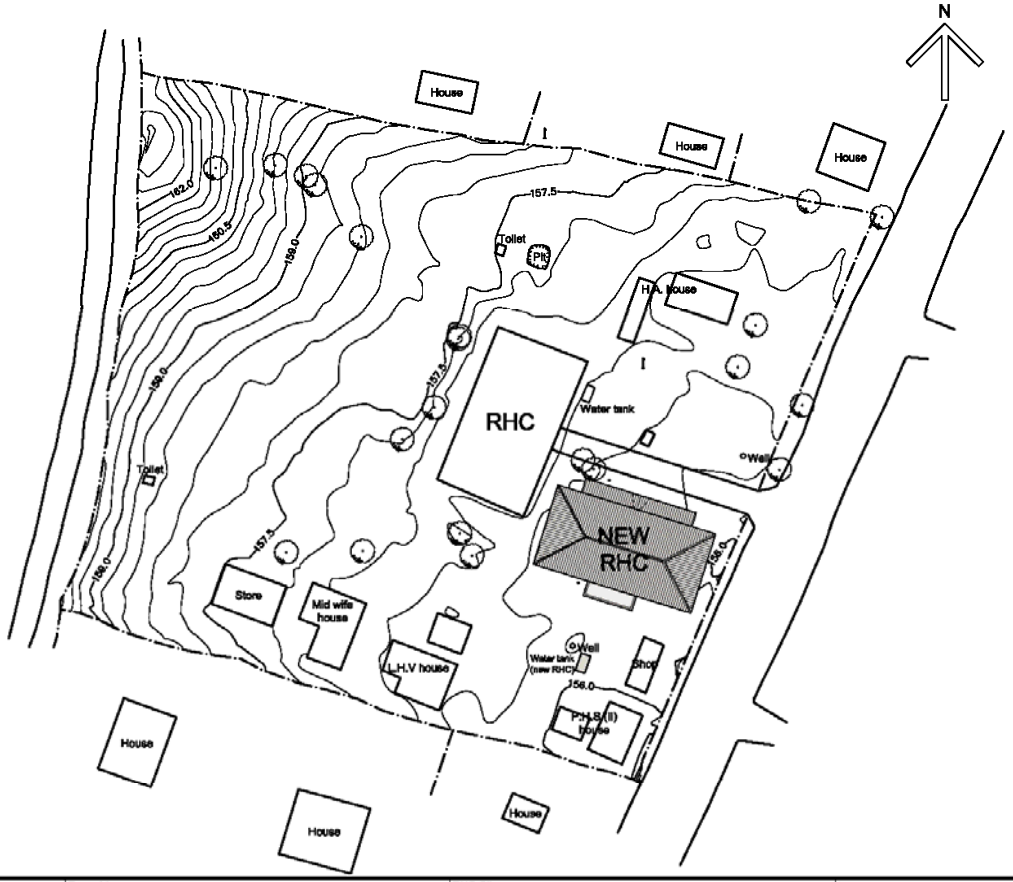
142	PAUK	Chaung Gu	



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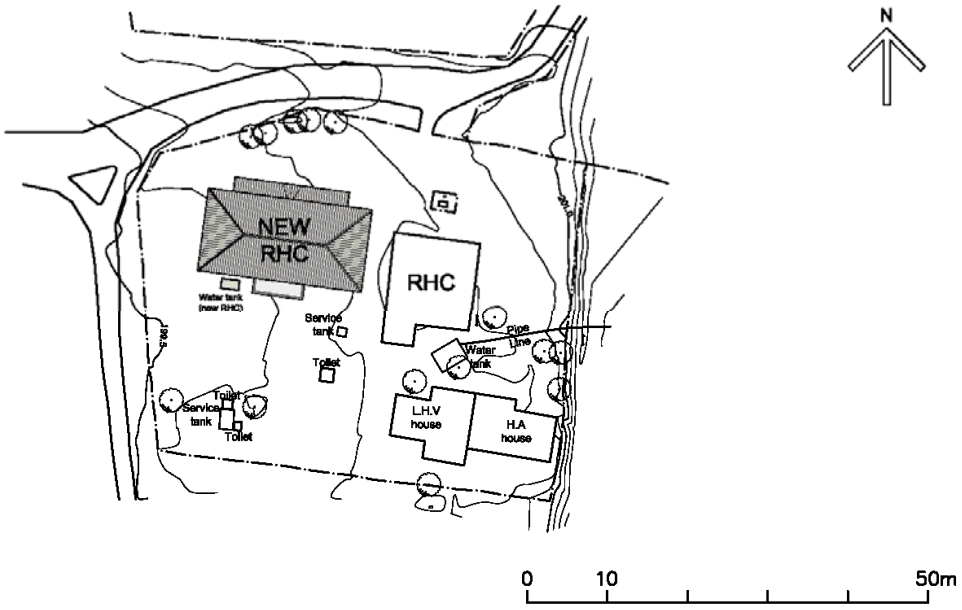
131	MYAING	Kan Net	



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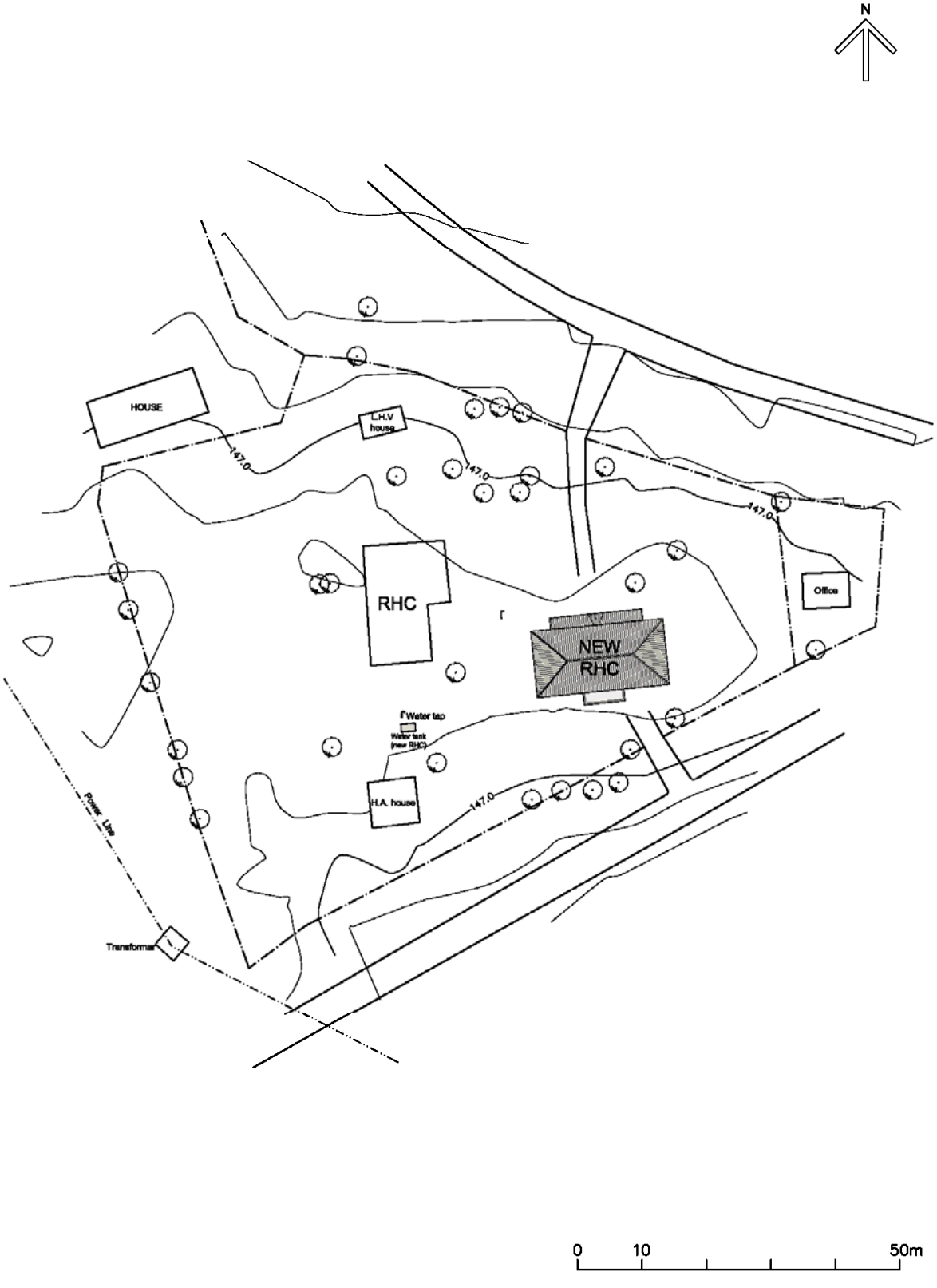
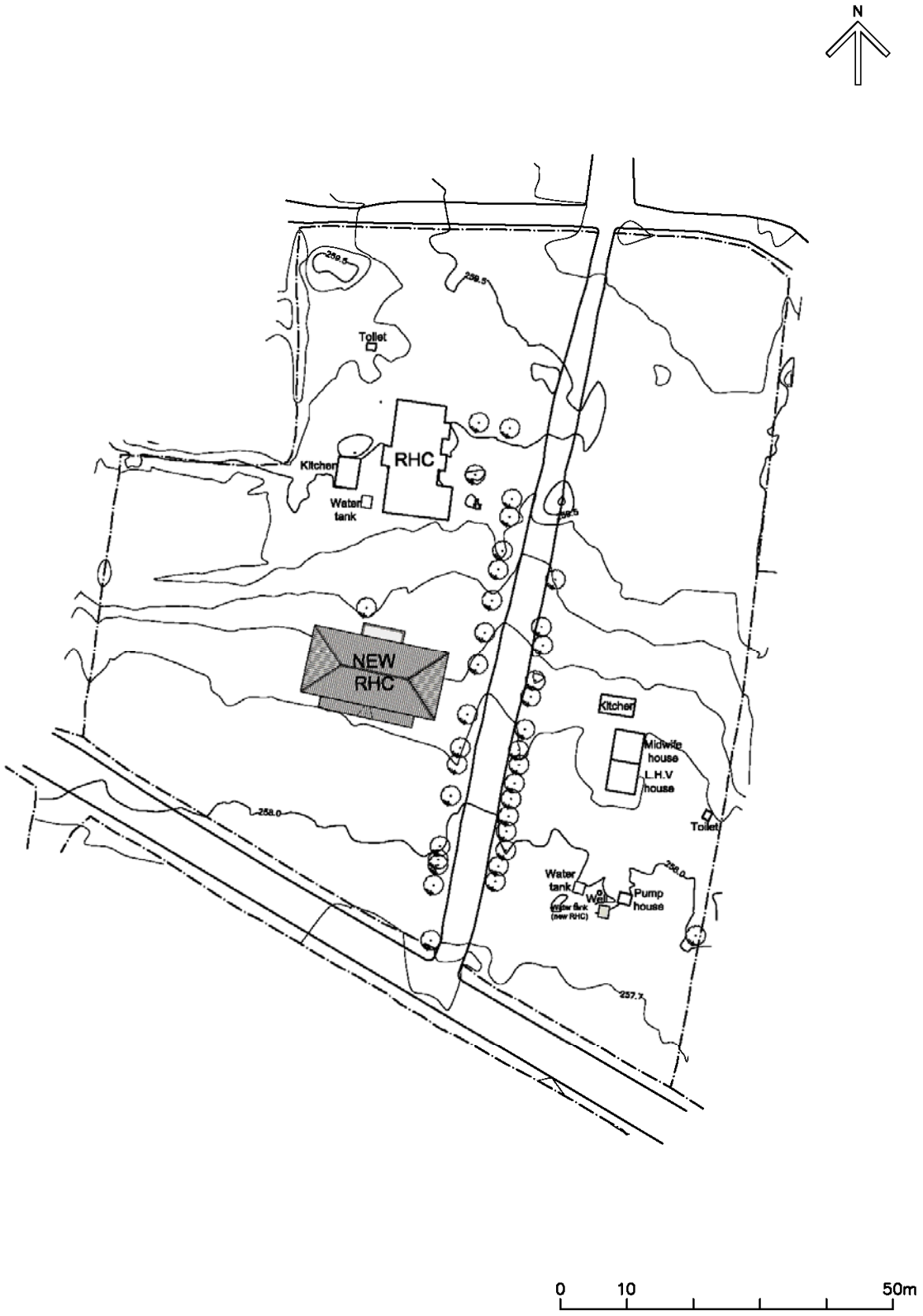
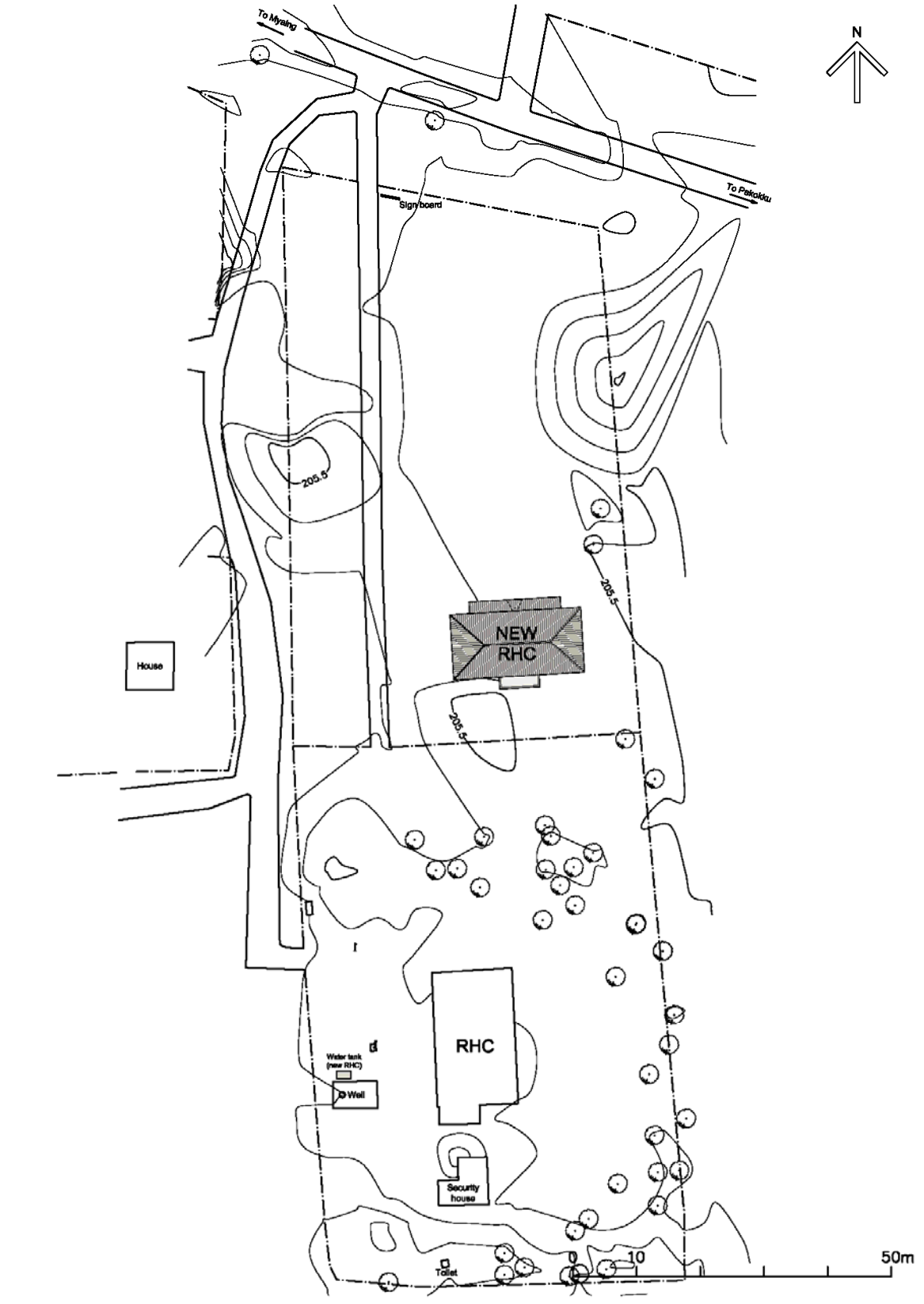
132	MYAING	Lin Ka Taw	



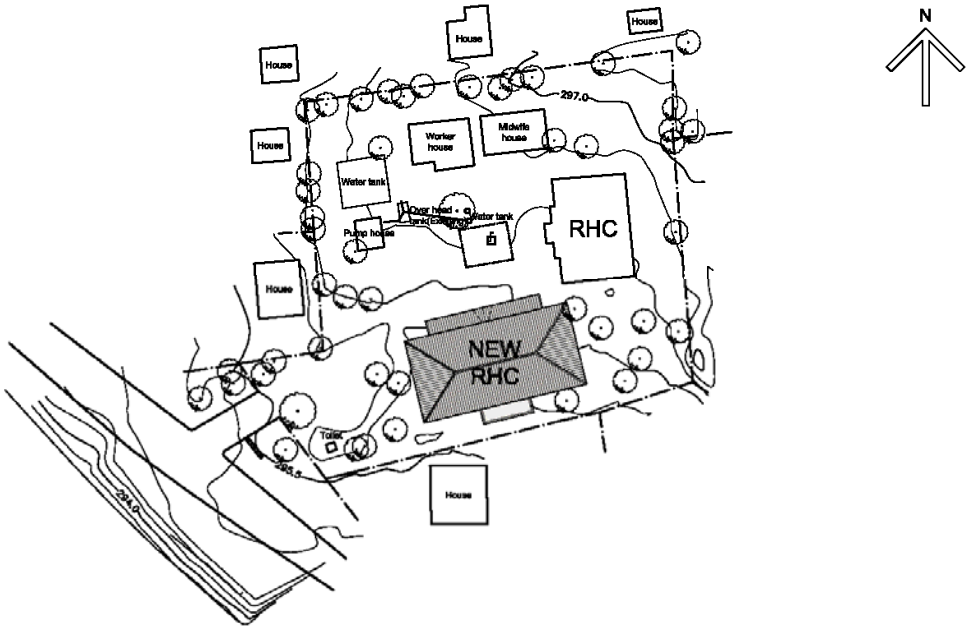
RHC No.	Township:	RHC Site:	
133	MYAING	Tha Ma Gyi Kan	



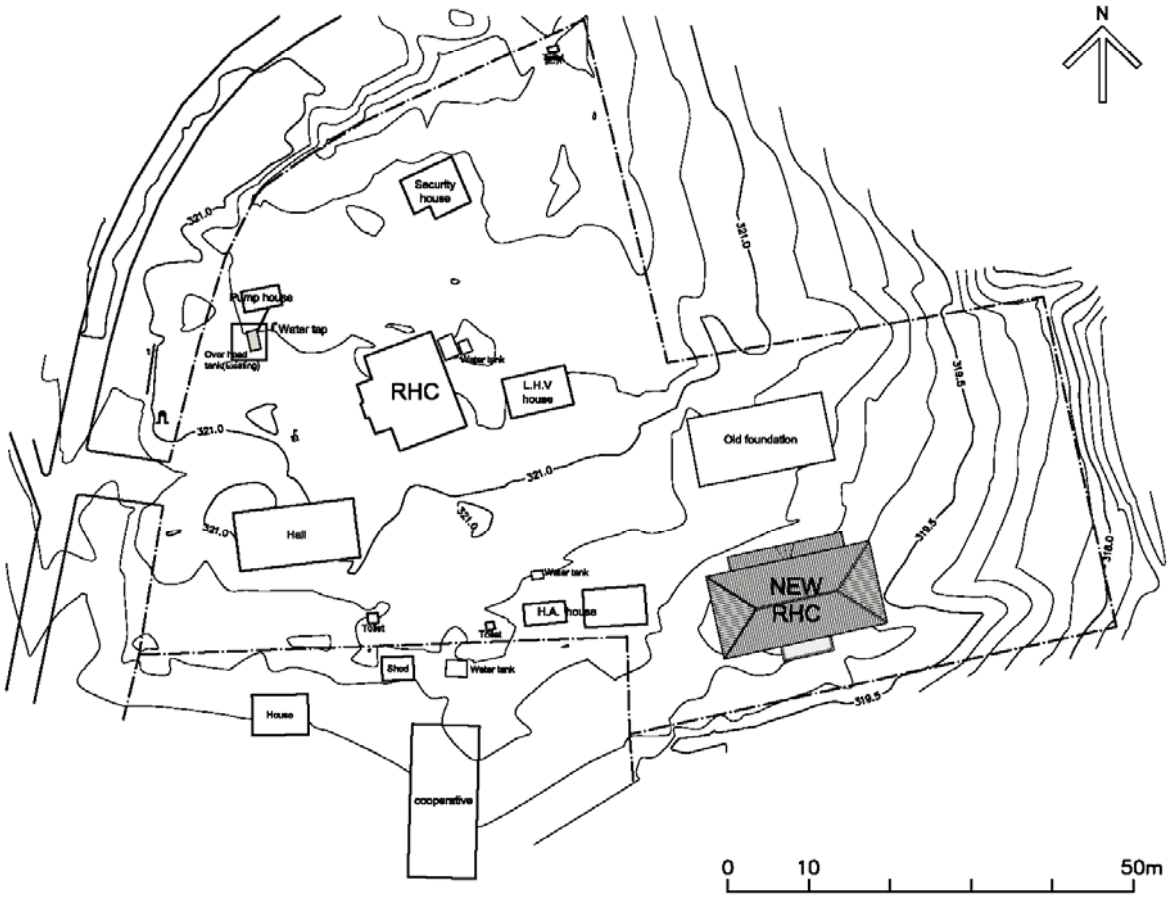
RHC No.	Township:	RHC Site:	
135	MYAING	Kyauk Sauk	



RHC No.	Township:	RHC Site:	
27	NATMAUT	Thar Myar	



RHC No.	Township:	RHC Site:	
28	NATMAUT	Saing Guang	



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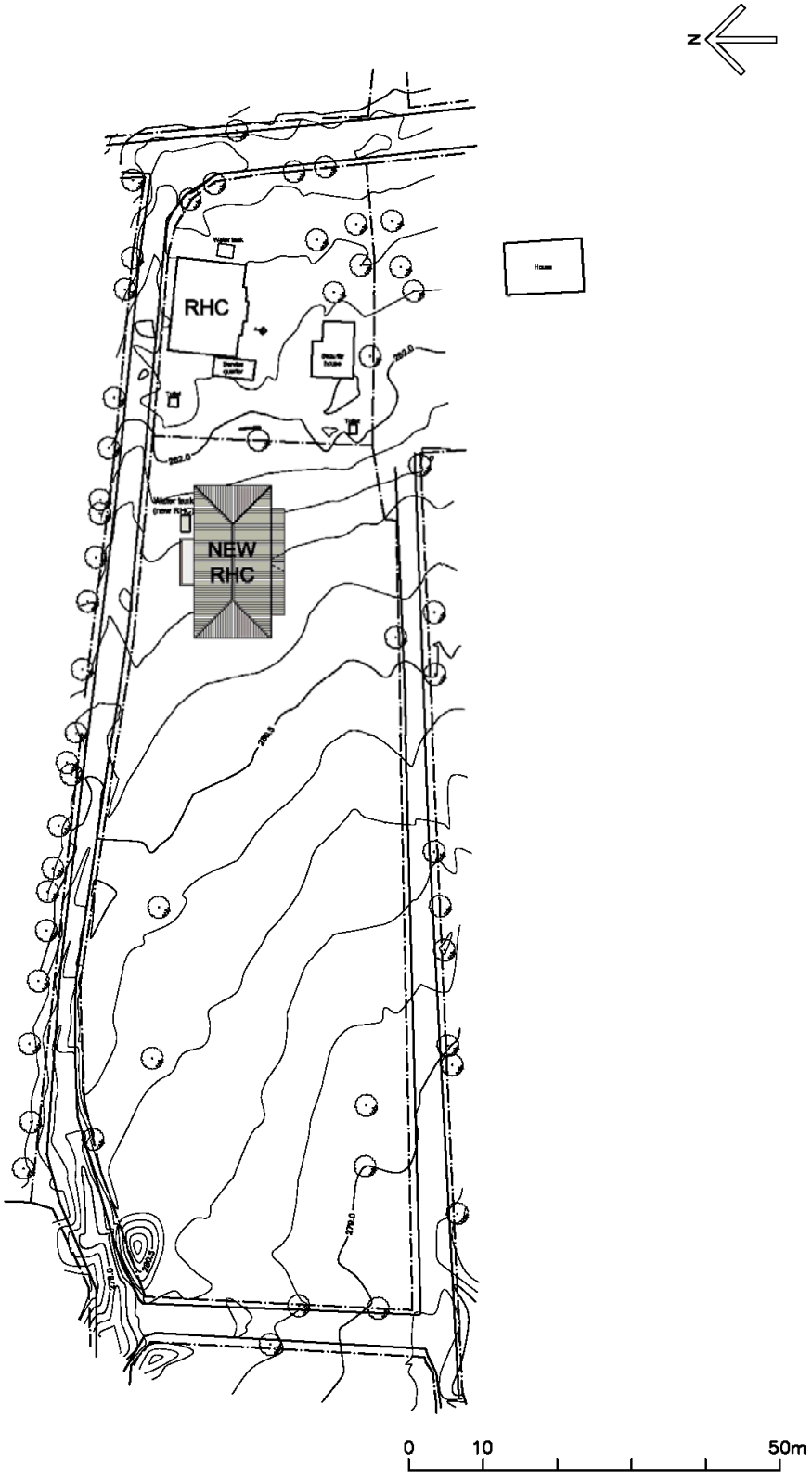
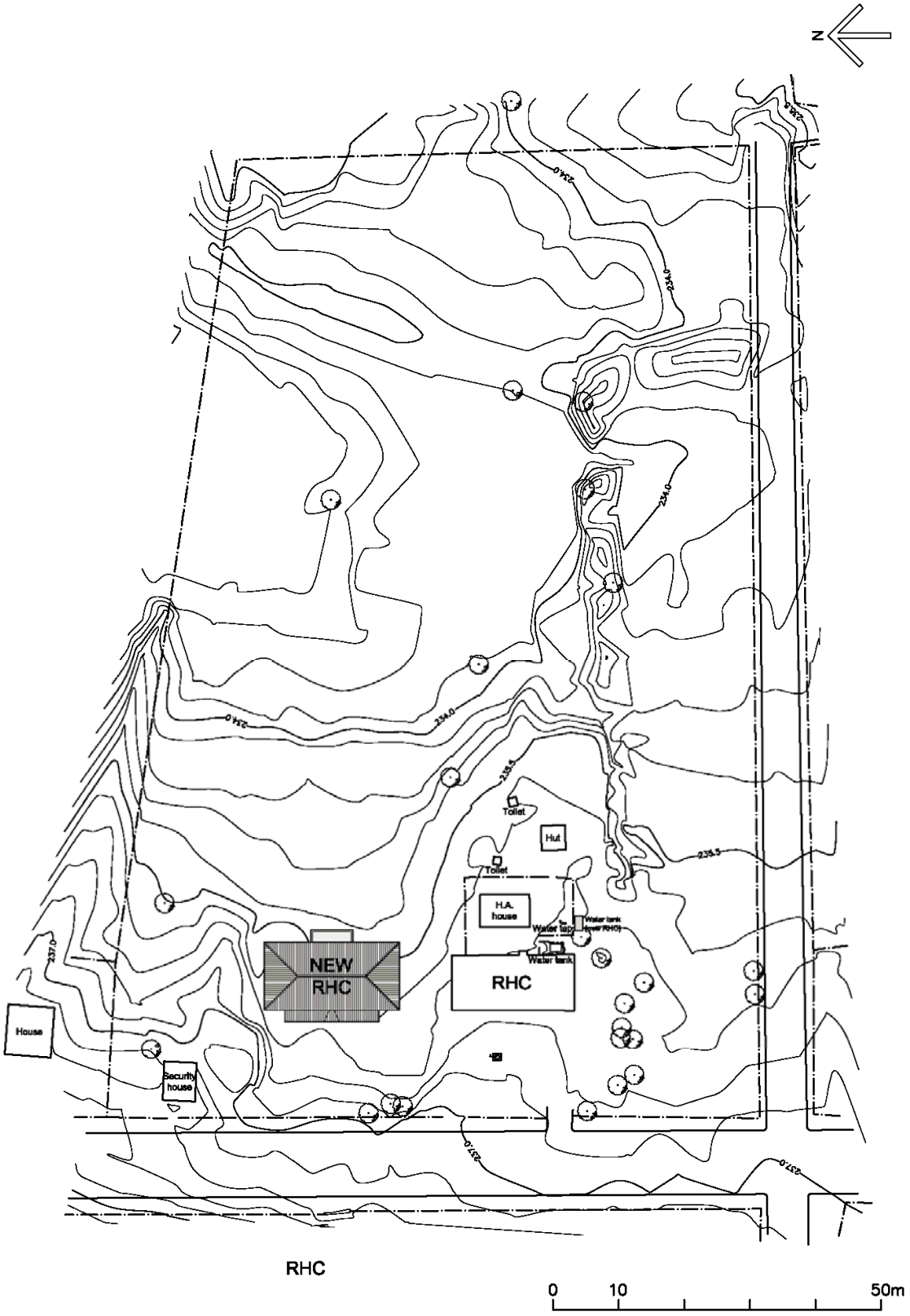
30	NATMAUT	Tet Wun	

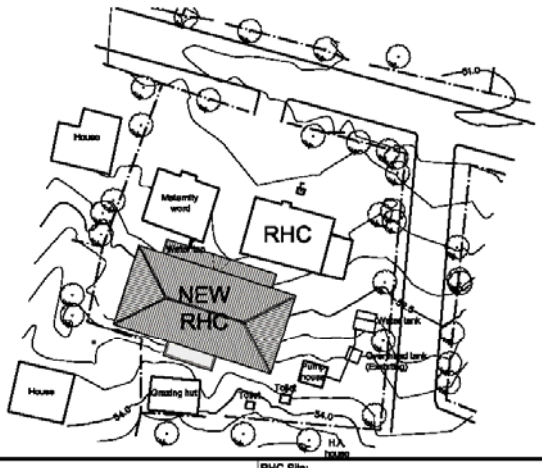


RHC No.	Township:	RHC Site:	
31	NATMAUT	Tha Hmon Gon Gyi	

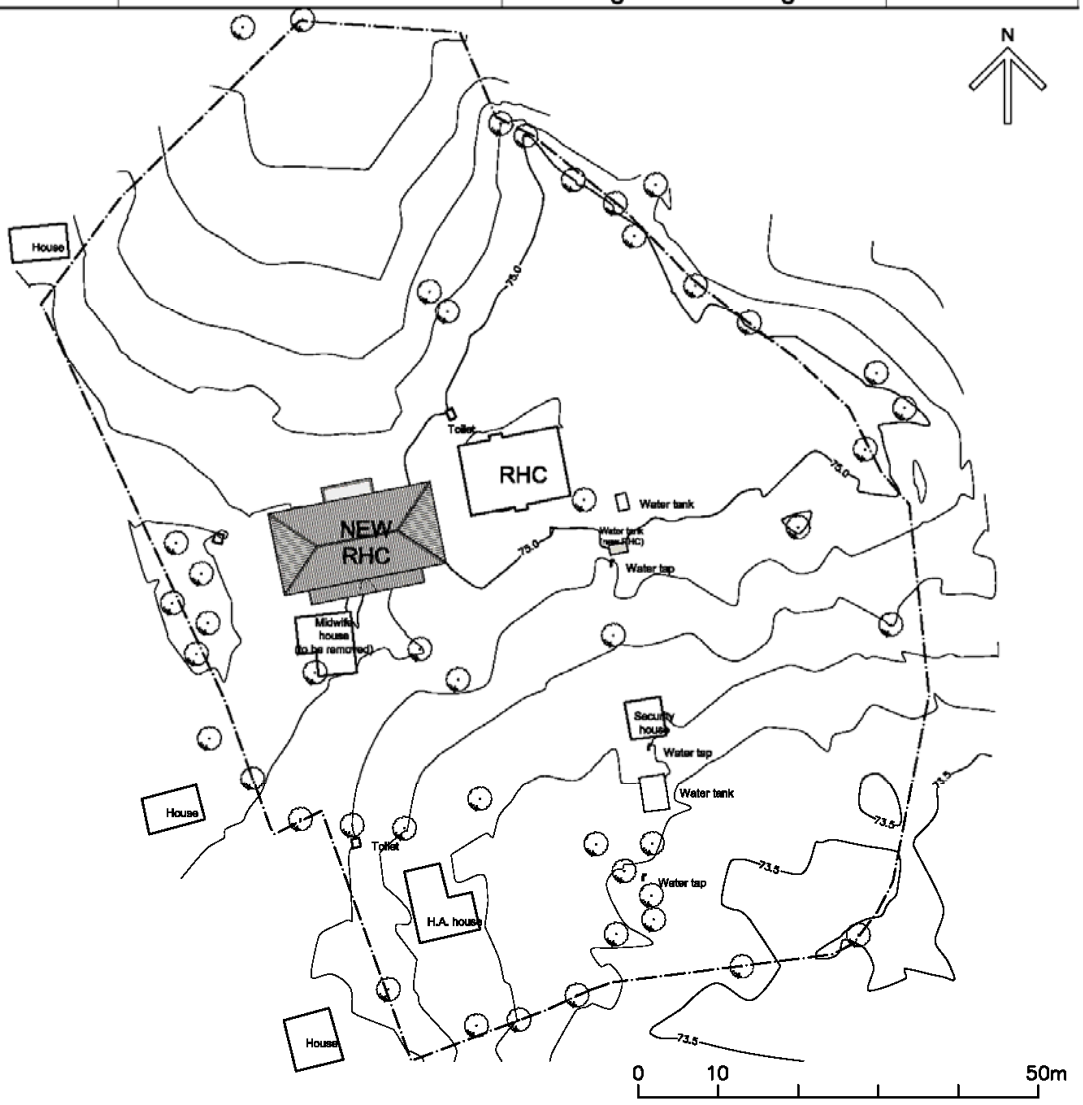


RHC

RHC No.	Township:	RHC Site:	
56	SALIN	Phaung Lin	

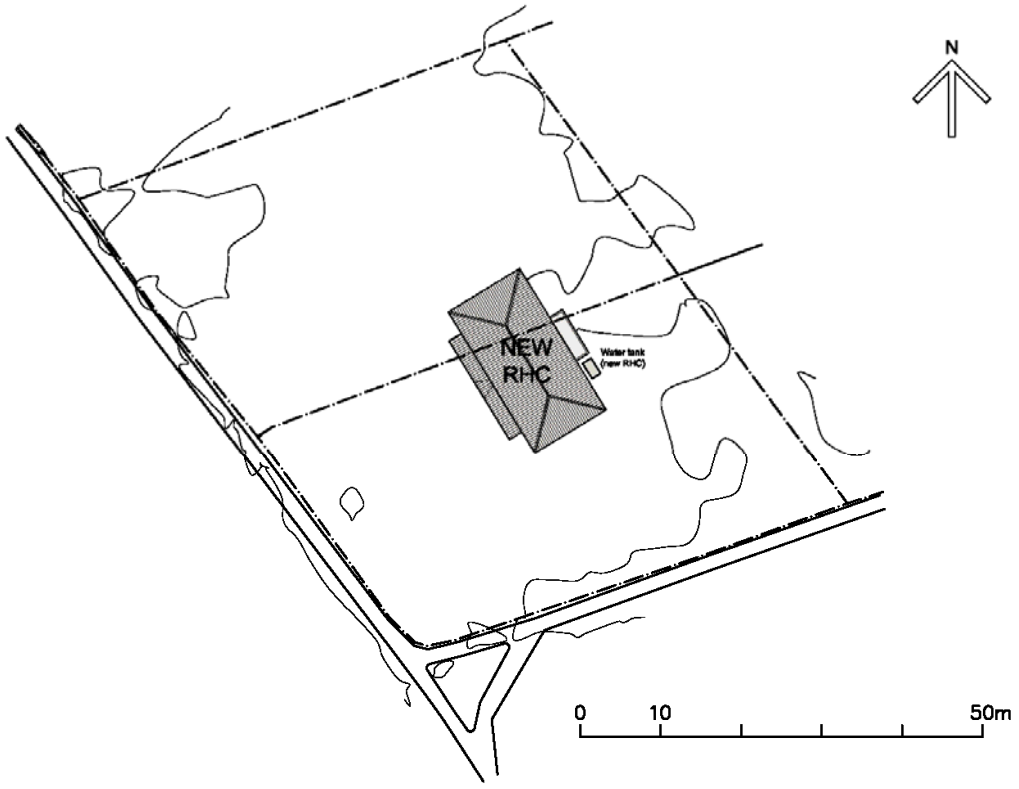


RHC No.	Township:	RHC Site:	
59	SALIN	Nga Than Gaung	

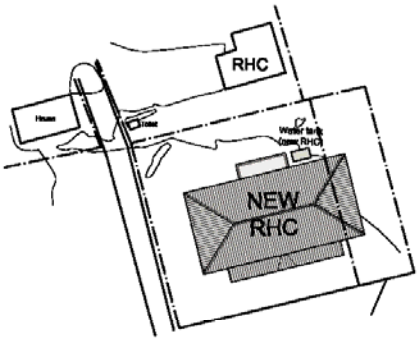


RHC No.	Township:	RHC Site:	
54(3)	SALIN	Kan Bya	

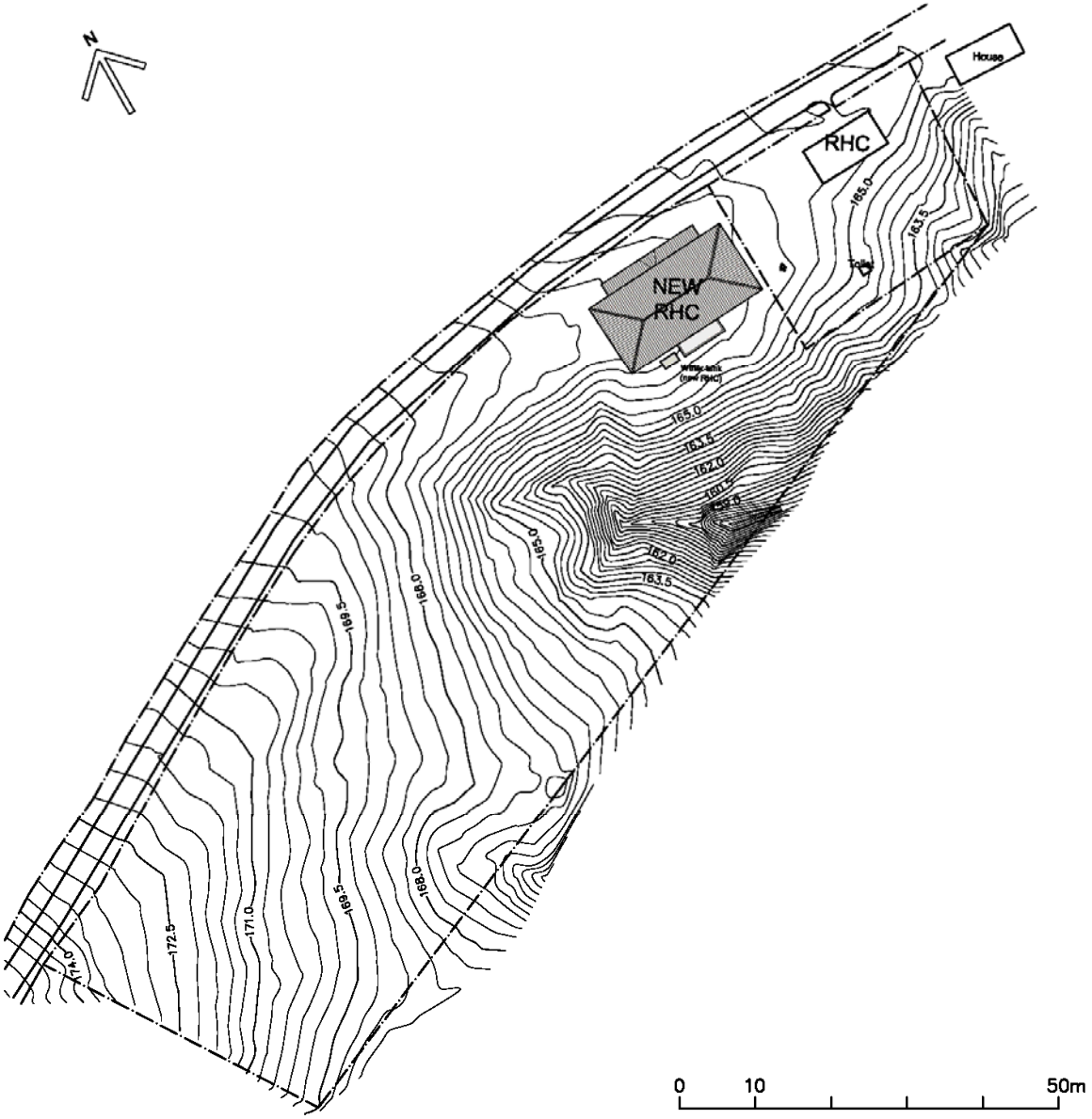
RHC No.	Township:	RHC Site:	
58(1)	SALIN	Sin Ma Kty	



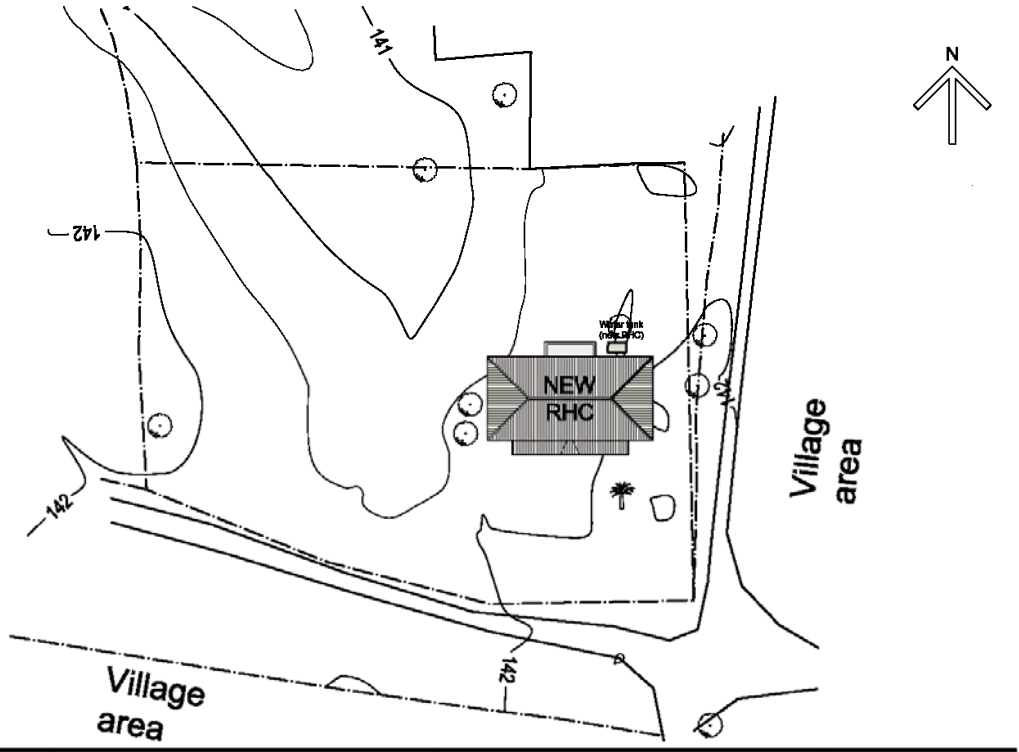
RHC No.	Township:	RHC Site:	
60(1)	SALIN	Tha Nat Kone	



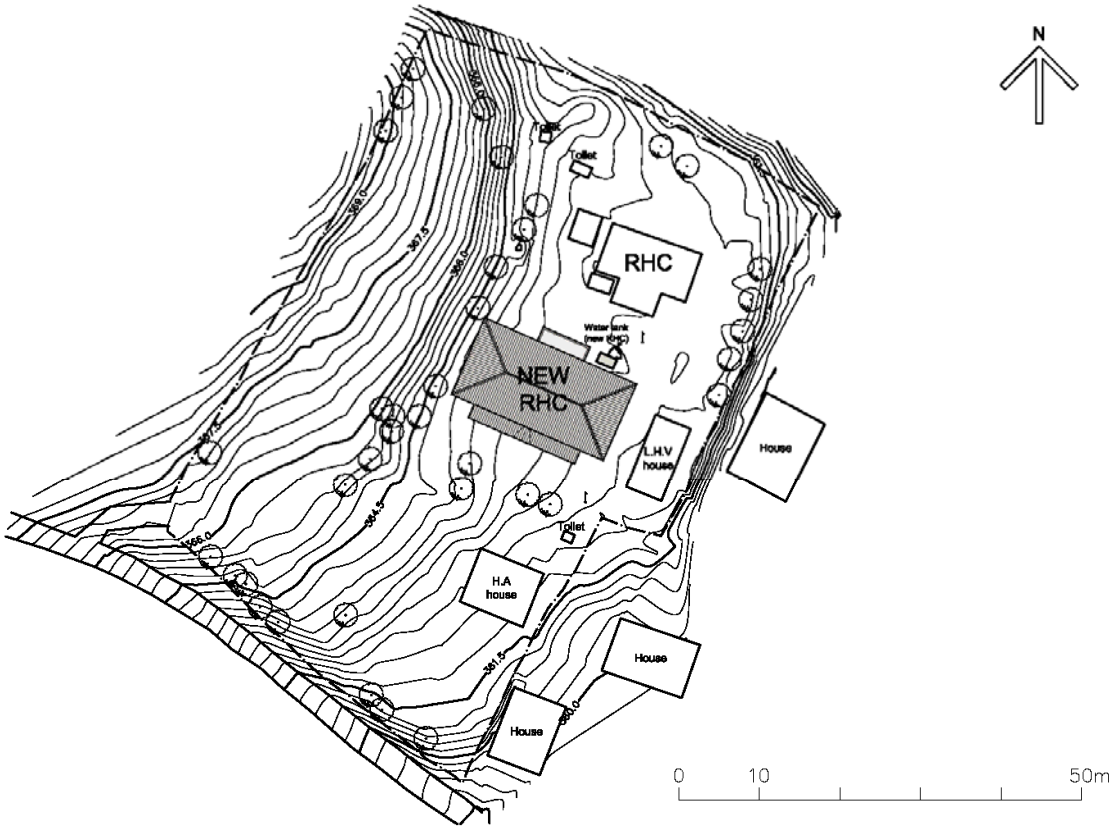
RHC No.	Township:	RHC Site:	
72	AY TOKE TA YAR	Kyee Wa	



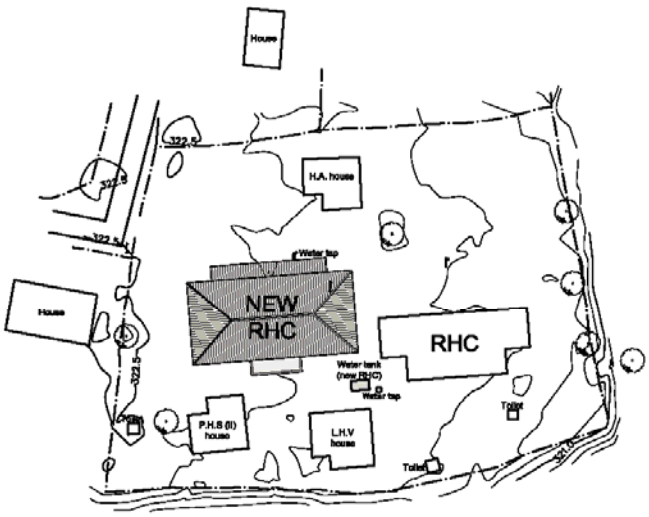
RHC No.	Township:	RHC Site:	
73	AY TOKE TA YAR	Pha Aing	



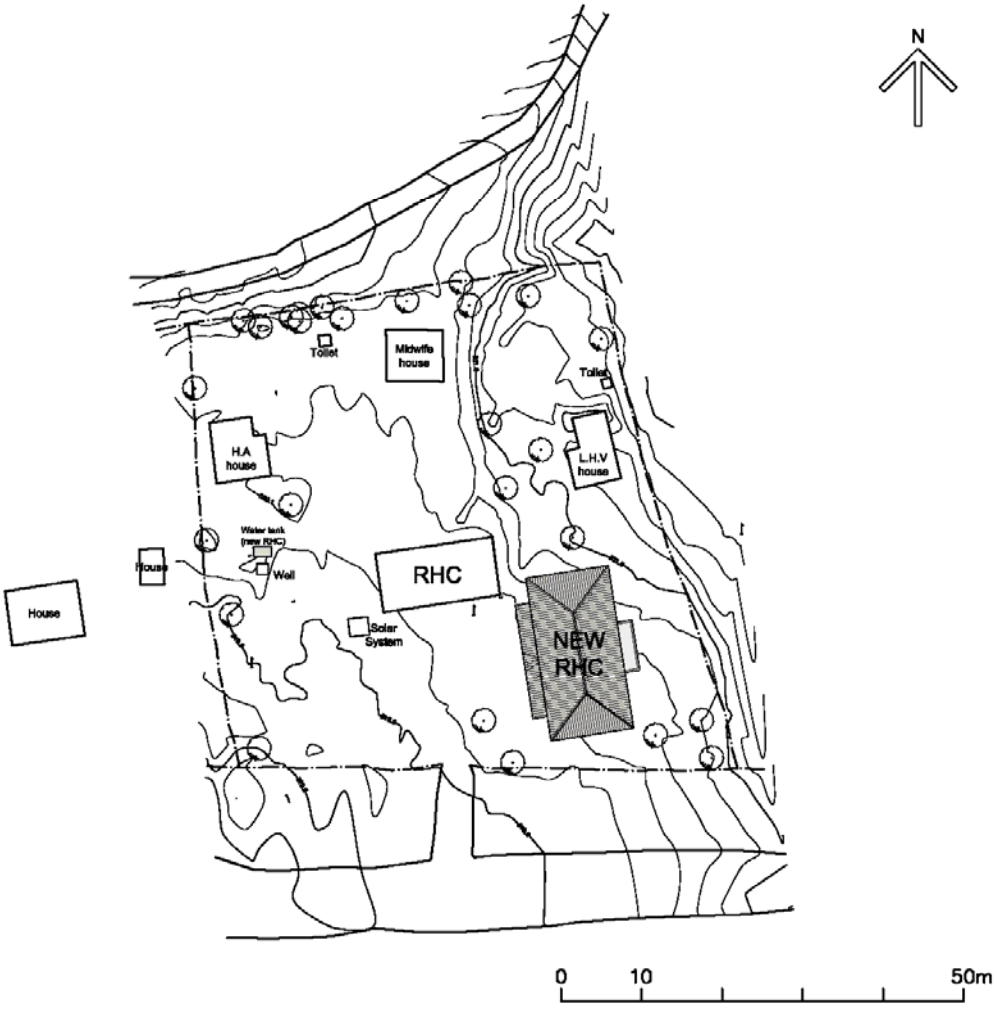
RHC No.	Township:	RHC Site:	
163	SAW	Mi Ai	



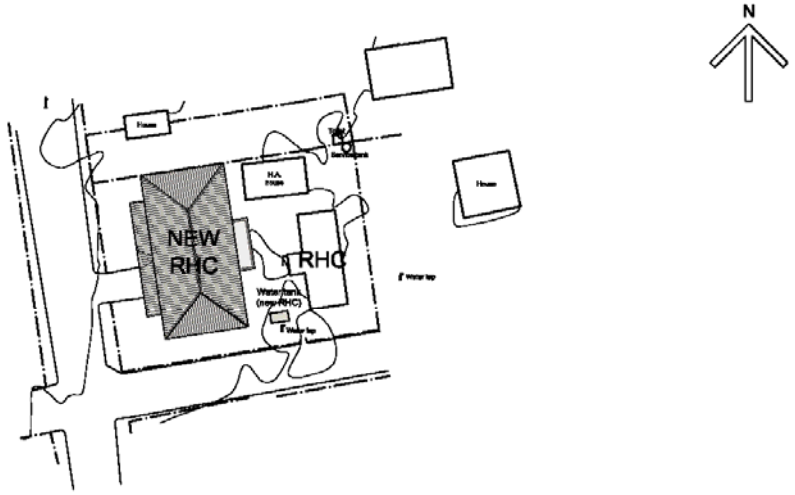
RHC No.	Township:	RHC Site:	
166	SAW	Ka Chaung	



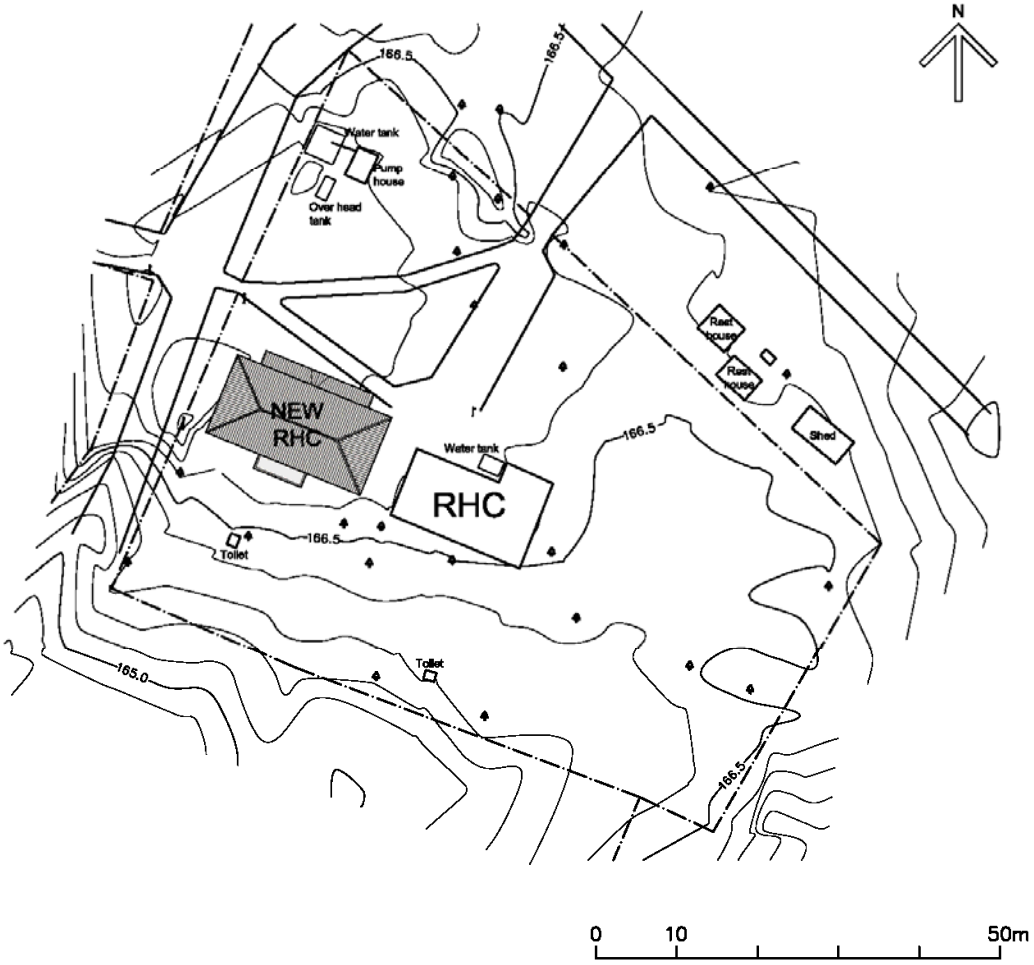
RHC No.	Township:	RHC Site:	
167	SAW	Ta Byin	



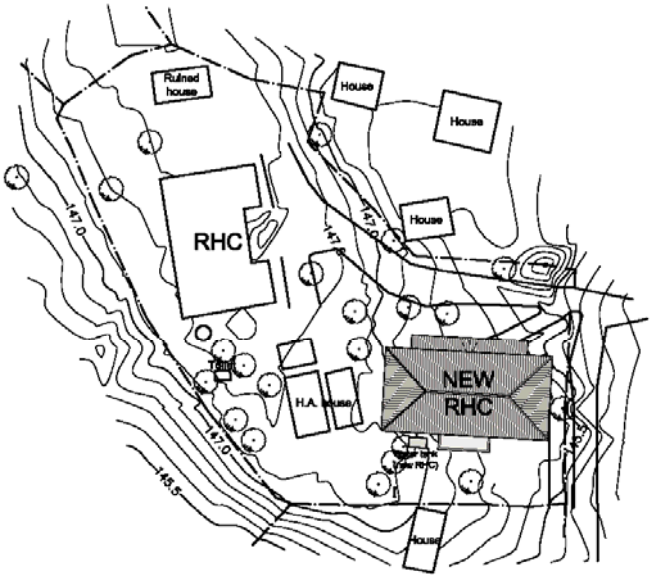
RHC No.	Township:	RHC Site:
122	YA SA GYO	Sin Ma Ye



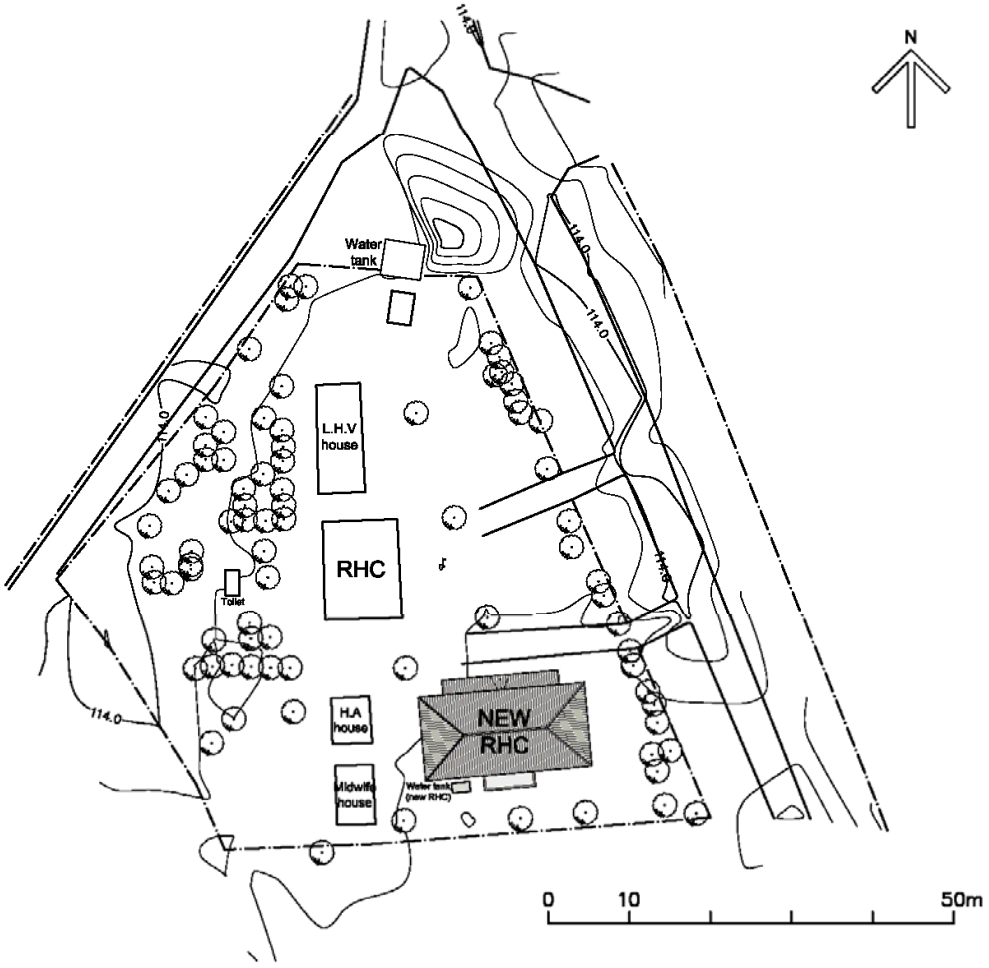
RHC No.	Township:	RHC Site:
123	YA SA GYO	Kok Ko Zu



RHC No.	Township:	RHC Site:
125	YA SA GYO	Hwe Hmyoke



RHC No.	Township:	RHC Site:
127	YA SA GYO	Thit Gyi Taw



2-2-4 Implementation Plan

2-2-4-1 Implementation Policy

The Project consists of construction works of medical facilities and procurement and installation works of equipment. The Project is to be carried out in accordance with Japan's Grant Aid Scheme.

After the Project is approved by the Cabinet of Japan, the Exchange of Notes (hereinafter referred to as "the E/N") will be signed between the GOJ and the GOM to make a pledge for assistance, which is followed by the conclusion of the Grant Agreement (hereinafter referred to as "the G/A") between JICA and the GOM to define the necessary articles to implement the Project, such as payment conditions, responsibility of the GOM, and procurement conditions. After the signing of the G/A, the GOM will conclude a consulting services agreement for the Project with the consultant in Japan which conducted the Survey, and the consultant will start the detailed design and preparation of tender documents for the Project. Upon completion of tender documents, tender procedure will take place for selection of a construction contractor and an equipment supplier, who are Japanese juridical persons. The respective contractors will execute construction of facilities and procurement and installation of equipment.

The Agreement with the consultant and the contracts with the construction contractor and the equipment supplier shall be verified by JICA in order to fulfill accountability to Japanese taxpayers.

(1) Implementing Organization

The responsible organization of the GOM for the Project is MOH, who will be a signatory of agreements and contracts. MOH, who is going to make use of the facilities/equipment, will be in charge of overall coordination of the Project. While, Township Medical Officer (TMO) of each targeted township will take charge of on-site coordination of works of the Myanmar side and the Japanese side during implementation of the Project.

(2) Consultant

After the signing of the E/N and the G/A, MOH will conclude a consulting services agreement for detailed design and supervision of the Project with a consultant in Japan and obtain verification of JICA in accordance with Japan's Grand Aid Scheme. The consultant will prepare detailed design documents and tender documents based on the Preparatory Survey Report (hereinafter referred to as "the Report"), and obtain consent of MOH.

In implementing tenders and construction works, the consultant is to assist tendering procedure of facilities and to supervise the construction works based on the tender documents. Also in the equipment works, the consultant is to assist tendering procedure and supervise procurement, installation and operation training works based on the tender documents.

1) Detailed Design

The services are to design facilities in detail and to review equipment plan based on the Report, and prepare tender documents including drawings, specifications, instructions to tenderers and draft contracts for construction works and equipment works.

2) Assistance of Tendering

The services are to assist tendering by the implementing agency to select a construction contractor and an equipment supplier and conclude the contracts, and to assist reporting the result to the GOM and JICA.

3) Supervision

The services are to confirm whether or not the construction contractor and the equipment supplier are carrying out their respective works in accordance with the provision of the relevant contracts, respectively, and to ensure that the contracted obligations are properly fulfilled. In addition, the consultant is to give the construction contractor and the equipment supplier instructions and advices and to coordinate their works for smooth implementation of the Project from the standpoint of fairness. Details of supervision services are as follows,

- Examining and confirming implementation plan, shop drawings, specifications of equipment and the other relevant documents submitted by the contractor and the supplier.
- Examining and confirming construction materials and quality and performance of the equipment delivered.
- Examining building equipment and medical equipment for delivery, installation and instruction for operation.
- Observing the progress of the construction works and the equipment works
- Inspecting the completed facilities and the installed equipment

In addition to the services mentioned above, the consultant is to report the progress of the Project, procedure of payment, handover after completion, etc. to the relevant agencies of Myanmar and JICA.

(3) The Construction Contractor and the Equipment Supplier

The construction contractor and the equipment supplier are to be selected by the open tender intended for Japanese firms. MOH will conclude a construction works contract and the equipment works contract separately with the lowest tenderer, as a general rule of the Japan’s Grand Aid Scheme. The construction contractor and the equipment supplier are to construct facilities, procure and install equipment and provide operation training of equipment to the Myanmar side in accordance with each contract.

(4) JICA

JICA provides necessary services for execution of the Project as the implementing agency of the GOJ for the Grant Aid in accordance with the Japan's Grant Aid Scheme.

(5) Local Consultants and Local Construction Companies

The Construction sites are 33 sites, in nine townships and each is in insufficient conditions to which access by construction vehicles is difficult during the rainy season. Consequently, it is assumed that the working time and the working area of the supervisor of the Japanese consultant will be limited. In that sense, local consultants will be utilized effectively in order to cover the difficulties. Local leading construction companies have acceptable capability and manpower, and are expected to work on the Project as subcontractors of the Japanese construction company.

2-2-4-2 Implementation Conditions

(1) Construction Conditions

The construction markets in Myanmar are active in two big cities, Yangon and Mandalay and overall construction conditions are described as follows,

- Contractors of Yangon and Mandalay have substantial technical capabilities in the local markets.
- Most of construction materials are imported from Thailand and China and those materials are also widely available in the local markets. Therefore, these materials can be procured without particular difficulties in Myanmar.
- Reinforced-concrete rigid frame structure with concrete-block or brick walls is becoming popular in Myanmar.
- Necessary skilled workers can be recruited in Yangon and Mandalay.
- The building permission for facilities belonging to MOH such as the facilities of the Project will be obtained with approval by MOH. In this connection, it is expected to be obtained in about one month by MOH.

(2) Points to be Considered on Construction Works

1) Schedule Control

The schedule of construction works will be influenced by a decrease of working efficiently for six months during the rainy season from May to October, besides it becomes difficult to access to each site. However, even in the rainy season, it is possible to continue construction works at a sluggish pace. In order to complete the Project on schedule, it is required to have options, for example to bring in construction materials in advance of the rainy season or to wait for the end of the rainy season to commence construction works. It is necessary to have regular meetings with

relevant agencies of the GOM, consultants and contractors and control the implementation schedule in consideration of the above-mentioned constrains in order to complete the Project on schedule.

2) Security Control

The Project site is located within the existing RHC premises, and the new facilities is planned to be constructed adjacent to the existing facilities. By providing an independent gate for the Project and enclosing the site with temporary fences, the construction works will not interfere with the daily medical services of the existing facilities. In addition, security guards will be arranged at the gate, and they will control vehicles and workers coming into the site for the safety of outpatients of RHC. It is necessary to make coordination among relevant personnel of RHC, consultants and contractors for the security control during the Project implementation period in advance of the commencement of construction works.

3) Security Measures

Security guards are to work for watch around the clock, taking turns, for each sites and temporary stockyards. It is also necessary to allocate security guards for the general office and four base offices of the Japanese construction company.

(3) Points to be Considered on Procurement of Equipment

Equipment for the Project will be delivered and installed in RHC/SHC and TSH/STH. And items of equipment which are difficult to interface with construction works will not be included. However, equipment delivery sites are many and dispersed; RHC 49, SHC 281, TSH 9, and STH 15.

It is necessary to contact closely with stakeholders such as chief medical officer of Township not to hinder daily medical services, during equipment installation works.

2-2-4-3 Scope of Works

The Project will be implemented through bilateral cooperation between the GOM and the GOJ. In case that the Project is implemented under Japan's Grant Aid Scheme, the works borne by each government are as the followings,

(1) Works Borne by the Grant Aid from the GOJ

Consulting services, construction of facilities and procurement and installation of equipment as the followings are borne by the GOJ.

1) Consulting Services

- Preparation of detailed design documents and tender documents of the facilities/ equipment
- Assistance for selection and contracting with a construction contractor and an equipment

supplier

- Supervision of construction of facilities, and procurement, installation and initial operation and maintenance training of equipment.

2) Construction of Facilities and Procurement and Installation of Equipment

- Construction of the facilities
- Procurement, transportation to the Project sites and installation of equipment
- Trial operations and adjustment of equipment
- Explanation and initial training of operation and maintenance of equipment

(2) Works Borne by the GOM

1. Related to Construction
• To provide the Project sites • To Level/clear the Project sites (Demolish the existing building, fell the existing trees) • Obtain the building permission (Planning approval of MOH)
2. Related to Maintenance and Operation
• Procurement and installation of general furniture, equipment and fittings, etc. not borne by Japan's Grant Aid • Procurement of consumables and spare parts necessary for the proper maintenance and operation • Appropriate and effective operation of the completed facilities and equipment
3. Related to Procedures
• Costs related to Banking Arrangement (B/A) and Authorization to Pay (A/P) • Applying for the building permission • Obtaining relevant permissions, licenses and other authorizations as may be necessary for the Project • Prompt unloading, customs clearance, tax exemption and internal transportation of the products for the Project • Exemption of Japanese nationals from custom duties, internal taxes and fiscal levies • According Japanese nationals such facilities for their entry into Myanmar and stay therein • Bearing all expenses other than those borne by Japan's Grant Aid, necessary for the Project

2-2-4-4 Consultant Supervision

(1) Supervision Policy

In accordance with Japan's Grant Aid Scheme, the consultant is to form a project team to ensure smooth implementation of the Project based on the Report. The principles for supervision of construction works and equipment works are as the followings.

- To keep close contacts with the officials in charge of the Project of both governments to ensure completion of construction of the facilities and procurement/installation of the equipment without delay
- To give prompt and proper instructions and advices with justice to the building contractor, the

equipment supplier and other concerned parties.

- To give proper advices on the initial training for operation and maintenance of the facilities and the equipment at the time of handover. To confirm the completion of construction works and equipment works in compliance with contents of the contract, to witness handover of the facilities and the equipment, and to conclude the consulting services by obtaining MOH's consent.

(2) Supervision Plan

In view of the complexity of the Project and the dispersion of the Project sites, the consultant will dispatch two qualified engineers to the Project sites, one resides throughout the Project implementation periods and the other resides during the rainy season, while to send the following engineers to the Project sites as needed from time to time.

- Chief Consultant / Deputy Chief Consultant : Overall supervision
- Architectural Design : Check of design intent, shop drawings and material specifications
- Structural Design : Check of bearing capacity of soil
- Mechanical Design : Midterm and final inspection of pluming works and air conditioning works
- Electrical Design : Midterm and final inspection of wiring works and power receiving and transforming facilities
- Equipment Planning: Instruction of equipment installation, coordination with construction works, witness of numerical examination, check of initial operation and maintenance training, and operation and maintenance manuals, etc.

(3) Construction Supervision by the Construction Contractor

In order to complete the facilities within the scheduled period in comformity with the contract documents, the construction contractor needs to coordinate with local sub-contractors and manage the construction works. Moreover, resident supervisors need to be familiar with the local construction conditions in order to complete the Project in the required quality.

(4) Equipment Installation Works

- Installation, trial operation, quantity inspection, instruction of equipment operation
- Preparation of the spare parts of main equipment which are subject to trouble and handover the list to MOH

2-2-4-5 Quality Control Plan

All the 33 project sites are located in rural area and there is no batcher plant. Since the building scale is small and amount of concrete volume is modest, a drum type mixer will be placed in each site, and concrete will be casted by man power. According to the meteorological data of Magway region in

2011, the average yearly maximum temperature is over 30 degrees Celsius. Therefore, concrete is assumed to be hot weather concrete, and required appropriate control of temperature and quality.

The supporting layer of the ground has not plenty of ground water, however the foundation works during the rainy season need to be done with pumping up water, which needs to be controlled with the construction execution plan to keep the quality of the construction works.

The quality control plan of the main construction work types is as followed,

Table 2-16 Quality Control Plan

Work Type	Control Parameter	Control Value	Test Method	Quality Standards	Frequency of Measurement	Analysis of Results
Earth work	Bearing capacity of ground	Ra=98kN/m^2 or more (long-term)	Plate bearing test	BS	1 location each site	Test report
	Slope angle	Within planned range	Gauge, visual	JIS	As needed	Photos, documents
	Bedding accuracy	Within +0～-5cm	Level, visual		〃	〃
	Foundation work height	Within +0～-3cm	〃		〃	〃
	Thickness of replaced soil	+5cm～0	〃		〃	〃
Reinforcement bars	Reinforcement cover thickness	Places not in contact with soil: 30m/m	Visual, measurement	Specifications	As needed	Photos, documents
		Places in contact with soil:	〃	〃	〃	〃
		Footing 60m/m	〃	〃	〃	〃
		Other 40m/m	〃	〃	〃	〃
	Processing accuracy	Stirrup, hoop ±5m/m	〃	〃	〃	〃
		Other ±10m/m	〃	〃	〃	〃
	Tensile test	Standard strength or more	On-site sampling or sampling at shipping	BS	1 test on 3 test pieces per 200t of steel bars with given diameter*	Test result report
Concrete work (mixing plant)	Compressive strength	Designed strength 21N/mm^2 or more	Attending at test site (any time)	BS, ASTM	3 or more test pieces for each placing and per 50m^3	Test result report
	Slump value	15cm±2.5cm	Attending at work site	〃	For each placing	Photos, documents
	Chloride content	0.3kg/m^3 or less	Test pieces, attending at work site	〃	〃	〃
	Air content	45% ±1.5%	Attending at work site	〃	For each placing	〃
	Concrete temperature	35 deg. or less	Attending at work site	〃	For each placing	〃
	Performance accuracy	10mm per 1m or less	Measuring	JIS	After form removal	〃
Masonry (bricks)	Compressive strength	According to each plant management value	Attending at compression test site after selection of adopted factory	BS	Once before shipment from factory	Test result report
Plastering Painting Roof waterproofing Fixtures	Materials, storage methods, work methods, mixing, coating thickness, curing, work accuracy	According to separate specifications	Same as left	Same as left	As needed	Photos, documents
Water supply & drainage	Water supply pipes	Leaking	Water pressure test(1.75MPa for 60 min.)	BS, JIS	On completion of pipe laying, for each system	Test result report
	Drainage pipes	〃	Water filling test	〃	〃	〃
Electrical work	Cables	Within planned range	Insulation test Conductivity test	BS, JIS	〃	〃

2-2-4-6 Procurement Plan

(1) Building Materials

1) Procurement Policy

Most of the building materials can be procured locally. This is favorable for maintenance after completion of the Project.

The building materials which cannot be procured locally or need to have specified quality for the facilities functioning will be imported from Japan and/or third countries.

2) Procurement Plan

- Building Frame Works

  The local materials such as reinforcing bars, concrete material and formworks, and bricks for walls, etc. will be procured locally.

- Interior and Exterior Works

  Materials for the interior and the exterior will be procured in local markets, including imported products, such as aluminum sashes, timbers, tiles, ribbed metal roofing, paint and glasses, etc.

- Sanitary Works

  Submersible pumps, tanks and sanitary wares, etc. will be procured in local markets, including imported products.

- Electrical Works

  Lighting fixtures, power panels, cables/wires and conduit/pipes, etc. will be procured in local markets, including imported products.

Table 2-17 Procurement Plan of Major Construction Materials

Architectural Work mainly BS products

Item	Procurement Plan			Remarks
	Local	Japan	Third Country	
Temporary Work				
Scaffold	○			Single pipe scaffold is popular
Temporary Fence	○			Barbed wire is popular
Temporary Office	○			Timber is popular
Material				
Portland Cement	○			Products made in Thailand etc. can be procured locally
Aggregate	○			Products quarried at each site can be procured
Deformed bar	○			Products made in ASEAN can be procured

Architectural Work

mainly BS products

Item	Procurement Plan			Remarks
	Local	Japan	Third Country	
Veneer Form	○			Products made in Thailand and China, etc. can be procured locally
Brick	○			Products baked at each site can be procured
Waterproofing Material	○			Products made in ASEAN can be procured
Light Gauged steel material	○			Products made in ASEAN can be procured
Color Metal Roofing	○			Products made in Thai etc. can be procured locally
Aluminum Door/Window	○			Products made in ASEAN can be procured and local processing
Wooden Door	○			Can be procured locally including veneering
Glass	○			Products made in ASEAN and China, etc. can be procured locally
Tile	○			Products made in Thai and China, etc. can be procured locally
Acoustic Board	○			Products made in Thai etc. can be procured locally
Cement Board	○			Products made in Thai etc. can be procured locally
Paint	○			Products made in Thai and China, etc. can be procured locally
Mechanical/Electrical Works				
Elevated tank	○			Products made in ASEAN and China, etc. can be procured locally
Pump	○			Products made in ASEAN and China, etc. can be procured locally
Pipe	○			Products made in ASEAN and China, etc. can be procured locally
Sanitary Ware	○			Products made in Thai and China, etc. can be procured locally
Distribution Panel	○			Products made in ASEAN and China, etc. can be procured locally
Conduit Pipe	○			Products made in ASEAN and China, etc. can be procured locally
Lighting Fixtures	○			Products made in ASEAN and China, etc. can be procured locally
Condenser Lightning Arrester	○			Products made in ASEAN and China, etc. can be procured locally

(2) Medical Equipment

The procurement of medical equipment for the Project will be decided based on actual sales performance for public medical facilities in Myanmar at manufacture's agents, stock numbers and variety of consumables and spare parts, and availabilities of trained local service staff. The medical equipment shall be procured from Japan, Myanmar and/or third countries.

Other than major medical equipment, medical furniture and some small steel-made equipment are also procured from Japan and/or third countries since they are more reliable in their qualities and

functions.

The Project will use the medical equipment which has easy access to procure consumables and spare parts at manufacture's agents in Myanmar or its neighbouring countries.

(3) Transportation plan

The construction materials and medical equipment procured in Japan and/or third countries will be contained in a wooden box or a container by sea. The main port for disembarkation in Myanmar will be Yangon where frequent mixed cargo services from Japan are in service. After passing customs at the bonded warehouse in the port of Yangon, construction materials and medical equipment will be forwarded to the Project sites by construction contractors and equipment suppliers using trailers. The well-maintained trunk roads which are linked to the center of each township from the port of Yangon will not bring particular problems to transport the materials/equipment. However, they have to transship from a trailer to a smaller vehicle at each township center for the access to each RHC site, since there may be difficulties in the conditions of narrow and rutty access road for going by a long vehicle.

Japan / third countries
↓ by sea
The port of Yangon, Myanmar
↓ by land
Each targeted township (transshipment)
↓ by land
Each targeted RHC site

The total length of the transportation from Japan including the departure and arrival of ship to Myanmar and custom clearance is estimated approximately one month and half. The procurement from the third countries will be shipped to the port of Yangon by a container as well.

Inland transportation of local procurement will be the same as above, however, it is highly important to take account of the delay of the delivery during the rainy seasons. The conditions of road such as mud will cause the significant delay of transportation. It is important to carry construction materials in advance of the rainy season.

2-2-4-7 Operation and Maintenance Training Plan

On-site training will be conducted by technical staffs from the manufacture's agents in order to maintain and operate the medical equipment appropriately, when it is delivered. It aims to maintain the equipment by their own means in the future by providing contact lists of manufacture's agents and the operational manuals.

- For operation (specifications of equipment, procedures of operation, function-check, etc.)

- For repair and maintenance (daily checkup, cleaning, adjustment and trouble shooting, etc.)

2-2-4-8 Implementation Schedule

When the Project is implemented by the Japan's Grant Aid, the implementation schedule until the commencement of construction works is as followed.

- The E/N is signed between the GOM and the GOJ, and the G/A is signed between the GOM and JICA.
- JICA recommends a Japanese consultant to the GOM.
- The agreement of consulting services for the Project is concluded between MOH and the consultant.
- The construction works is commenced after the detailed design, tender in Japan and conclusion of the contract for construction works with the verification by JICA.

After signing of the E/N and the G/A, the implementing agency of the Myanmar side is MOH.

(1) Detailed Design Phase

The consultant prepares the detailed design document and the tender document based on the Report, which consist of detailed design drawings, specifications, calculation, and tender documents, etc. The consultant has close talks and meetings with MOH at the beginning and the end of the detailed design phase, and completes the detailed design after submission of the final deliverables.

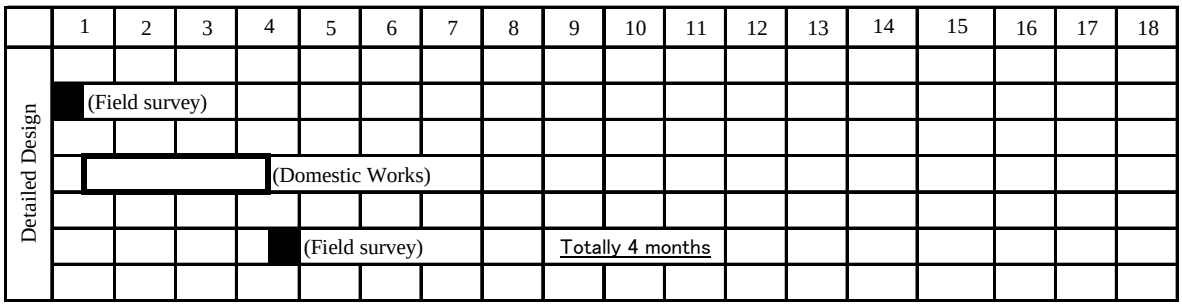
(2) Tender Assistant / Supervision Phase

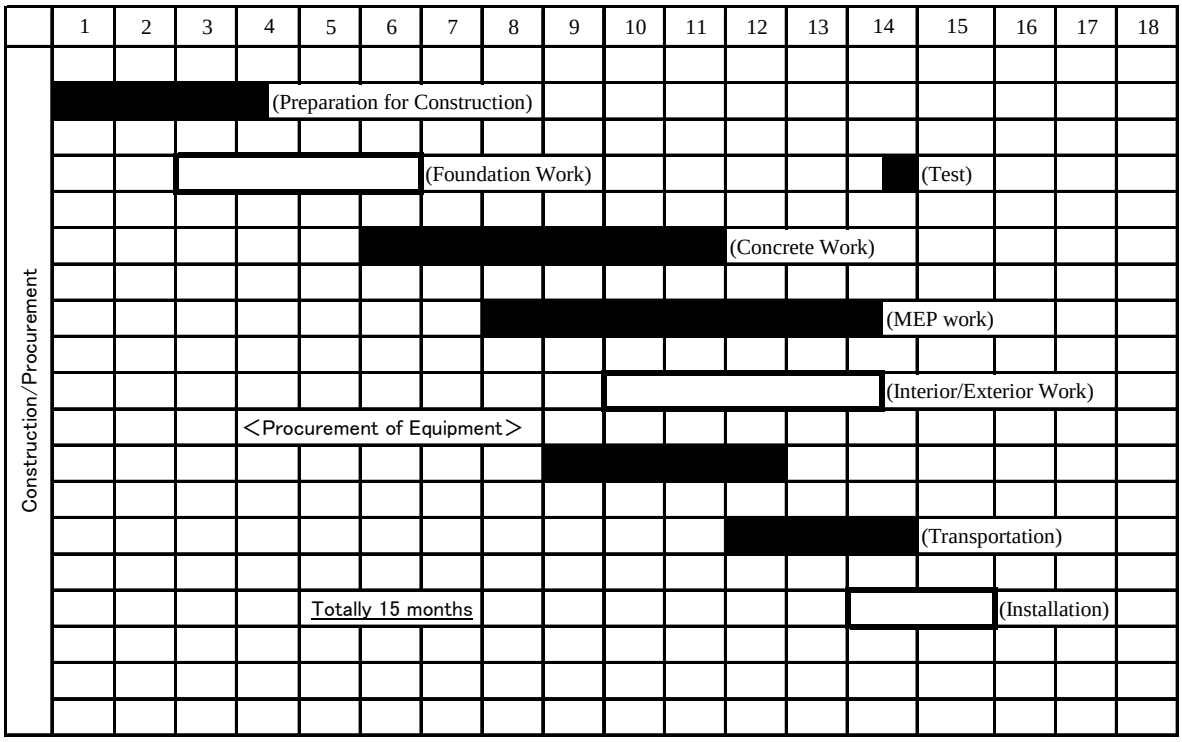
After detailed design phase, the prequalification (P/Q) of the tender for construction works will be announced in Japan. According to the result of evaluation of the P/Q, MOH will invite the qualified Japanese construction companies. The equipment suppliers will be tendered separately from the construction tender, and MOH will invite Japanese equipment suppliers who declare the intent to participate. Then MOH will conduct the tenders respectively in the presence of persons involved, and the tenderers who bid the lowest prices will make contracts as the winning tenderers with MOH respectively.

(3) Construction / Equipment Procurement

The contracts for the construction contractor and the equipment suppiler will be verified by JICA and the construction works and the equipment works will be commenced respectively. They will take totally approximately 15 months judged from the scale of the Project, the dispersion of the project sites, the local climatic conditions and the local construction conditions, realization of which needs smooth procurement of building materials and equipment, prompt execution of relevant procedures by the Myanmar side and implementation of the scope of works to be borne by the Myanmar side.

Table 2-18 Implementation Schedule





2-3 Obligations of Recipient Country

(1) Related to Construction

- To provide the Project sites prior to the tender stage for Japanese construction works.
- To level/clear the Project sites (demolish the existing buildings and felling the trees) prior to the tender stage for Japanese construction works.
- To obtain the building permission (approval by MOH) prior to the commencement of the Japanese construction works.

(2) Related to Operation and Maintenance

- To procure and install general furniture, equipment and fittings, etc. not within the scope of Japan's Grant Aid (including the relocation from the existing facilities)
- To procure consumables and spare parts necessary for the proper maintenance of the facilities and equipment
- To operate the facilities and equipment appropriately and effectively

(3) Related to Procedures

- To bear commissions, namely advising commissions of A/P and payment commissions to the Japanese Bank for the banking services based on B/A
- To apply for the building permission (the planning permission by MOH and notification to the relevant township)
- To obtain relevant permissions, licenses and other authorization as may be necessary for the implementation of the Project
- To ensure prompt unloading, customs clearance, tax exemption and to assist inland transportation of equipment and materials imported from Japan and/or third countries based on the verified contracts
- To exempt Japanese nationals engaged in the implementation of the Project from custom duties, internal taxes and other fiscal levies which may be imposed in Myanmar.
- To accord Japanese nationals engaged in the implementation of the Project such facilities as may be necessary for their entry into Myanmar and stay therein
- To bear all the expenses, other than those covered by Japan's Grant Aid, necessary for the implementation of the Project

2-4 Project Operation Plan

2-4-1 Maintenance Plan

(1) Operation System

HA, LHV, PhS-2 and MW each 1 person, 4 medical staffs in total for one RHC, and PHS-2 and MW each 1 person, 2 medical staffs in total for one SHC are to be allocated.

However, under the present circumstances, the prescribed numbers of medical staffs are not stationed at each center as per the following table.

Consequently, MOH has to recruit necessary numbers of medical staffs for each center for the Project.

Especially, proposed 4 RHCs which will be upgraded from SHC have to increase their medical staff from only 1 MW (At some SHCs, MW is not stationed) to 4 medical staffs (HA, LHV, PHS-2 and MW, each 1 person).

Table 2-19 Staff List of Medical Facilities

				HA	LHV	PHS-2	MW	Delivery RM
1	Pakokku	112	Lay Taing	○	○	×	○	×
2		115	Ywa Thit Kone	○	○	×	○	×
3		112(3)	Taugpalu	△	△	×	○	×
4	SeikPhyu	145	Auk Seik	○	○	○	○	○
5		146	Lat Sail	○	○	×	○	×
6		147	Inn Gan	○	○	×	○	×
7		144(3)	Kyaung Yuan	△	△	×	×	×
8	Pauk	138	Kyauk Taing hin	○	○	○	○	○
9		139	Ye Bya	○	○	○	○	○
10		140	Nant Thar	○	○	×	○	×
11		142	Chaung Gu	○	○	○	○	○
12	Myaing	131	Kan Net	○	○	×	×	○
13		132	Lim Ka Taw	○	△	×	○	○
14		133	Ma Gyi Kan	○	○	○(2)	○	×
15		135	Kyauk Sauk	○	○	○	○	○
16	Natmaut	27	Tha Myar	○	○	×	○	×
17		28	Sing Kaung	○	○	×	×	×
18		30	Tet Wun	○	○	×	○	×
19		31	Tha Hmone Kone	○	×	×	○	○
20	Salin	56	Phaung Lin	○	○	○	○	○
21		59	Nga Than Gaung	○	×	○	○	×
22		54(3)	Kan Pyar	△	△	×	○	×
23		58(1)	Sin Ma Kty	△	△	×	○	×
24		60(1)	Tanatokhone	○	○	×	○	×
25	Say Toke	72	Kyee Wa	○	○	×	○	×
26	Ta Yar	73	Pha Aing	○	○	×	○	○
27	Saw	163	Mi Ai	○	○	△	○	×
28		166	Ka Chaung	○	○	○(2)	×	×
29		167	Ta Byin	○	○	×	○	×
30	Ya Sa Gyo	122	Sin Ma Ye`	○	○	○	×	×
31		123	KokkoSu	○	○	×	○	×
32		125	Khwe Hanyoke	○	△	○	×	×
33		127	Thit Gyi Taw	○	○	×	○	×
			○	43	37	20	43	10
○=Posted, △= No Sanction,			△	7	9	1	0	0
×=Vacant			×	2	6	31	9	23

(2) Maintenance System

At present, RHC requests outside construction companies for repairing works of the facilities and outsources maintenance/repair of equipment to manufacturer's agents through the community.

After the completion of the Project, the maintenance of the new facilities will be outsourced in the same way as the existing facilities. Therefore, mechanical/electrical equipment of the new facilities are proposed based on the equipment or systems which are presently available in Myanmar.

Engineers of the maintenance section of CMSD maintain every TSH, STH and RHG. In addition, since medical equipment is sophisticated and spare parts are diversified in recent years, the increasing number of medical equipment needs specialized and complicated maintenance by the manufacturer's agents. Therefore, items of the medical equipment for the Project are planned to be basic types which will not need the maintenance by technical staff of manufacturer's agents

2-4-2 Operation Plan

(1) Facilities

Daily cleaning and repair of attrition, break and aging are important for the maintenance of facilities. Cleaned facilities make patients and medical staff take good care of facilities

Repair is mainly for finishes of the interior and the exterior which protect the structure of the facilities. In the case of Japan, refurbishment is expected to have every 10 years for retaining the facilities function.

Items for periodical inspection and repair works which affect the life span of the facilities will be shown on the Maintenance Manuals submitted by the construction contractor at the handover of the new facilities, which explains methods of inspection and regular cleaning. In general, the outline of the periodical inspection of the facilities is as follows,

Table 2-20 Outline of Periodical Inspection (Facilities)

	Contents of Inspection	Numbers of Inspection
Exterior	• Repair/ repaint of exterior walls	Repaint once/5 years, Repair once/3 years
	• Inspection and repair of roofs	Inspection once/3 years, Repair once/10 years
	• Inspection and repair of sealing of exterior fittings	Once/1 year
	• Regular inspection and cleaning of gutters and manholes	Once/1 year
Interior	• Review of the interior	As needed
	• Repair / repaint of partition walls	As needed
	• Renewal of ceiling materials	As needed
	• Adjustment of doors and windows	Once/1 year
	• Exchange of fixtures of fittings	As needed

(2) Facility equipment

Facility equipment needs preventive maintenance on the daily basis before repair of breaks and exchange of parts. The life span of facility equipment can be extended by normal operation and daily inspection/fueling/cleaning/repair, etc. in addition to the length of operating hour. These daily inspections can prevent happening and expanding of accidents.

The generator and pumps, etc. require periodical maintenance, and it is necessary to have annual periodical inspections by outside private companies. The life spans of main items of facility equipment are as follows,

Table 2-21 Life-span of Equipment

	Equipment	Life-span
Electrical	• Distribution Frame • LED Lamp • Generator	20 - 30 years 20,000 - 40,000 hours 30 years
Plumbing	• Pump, Pipe • Tank • Sanitary Ware	15 years 20 years 25 - 30 years

(3) Medical Equipment

It will be highly important to check and clean the equipment regularly in order to maintain the equipment appropriately after daily use. In addition, the equipment should be used only for the purpose of the equipment based on the instruction handbook. Therefore, the initial operation and management training should be given to the medical staffs in advance of the handover of the medical equipment to the targeted facilities.

2-5 Project Cost Estimation

2-5-1 Initial Cost Estimation

The Project Cost to be borne by the Myanmar Side is estimated as followed.

Table 2-22 Estimated Project Cost to be borne by the Myanmar Side

Items borne by the Myanmar side	Estimated Cost (US$)	Converted into Japanese yen (1US$=80.52yen)
(1) Related to Construction		
Demolition of pavement and clearing of the Project site	4,551	366,447
(2) Related to Operation and maintenance		
Procurement of general furniture, equipment and fittings	—	—
(3) Related to Procedures		
Commissions of A/P and B/A	3,300	265,716
Total	7,851	622,163

2-5-2 Operation and Maintenance Cost

(1) Estimated Operation and Maintenance Cost of RHC

The following is the operation and maintenance cost estimated for a RHC after completion of the Project.

Table 2-23 Operation and Maintenance Cost of RHC

Item	2010-2011	After completion of the Project
	Expenses(MMK)	Expenses(MMK)
(1) Operation Cost		
1. Personnel Expenses (Borne by MOH)	216,500	229,490
2. Operation and maintenance expenses	100,000	112,080
3. Generator fuel cost	0	154,966
4. Equipment consumables cost	0	16,670
(2) Maintenance Cost		
1. Facilities/Equipment	100,000	168,500
Total	416,500	681,706

(2) Conditions of Calculation

1) Personnel Expenses (Paid by MOH)

Each RHC is allocated 4 medical staffs and their salaries are paid by MOH.

216,500 MMK x 1.06 = 229,490 MMK

(1.06 means the half of the expected inflation rate of 1,208)

2) Operation and maintenance expenses

Operation and maintenance expenses of a RHC which include utility cost, transportation cost of vaccine, miscellaneous expenses, etc. are expected approx. 100,000 MMK. (as an average cost) excluding medicine cost to be paid by MOH and irregular building repair cost by the community. The expenses are calculated in consideration of the expected inflation rate of 12.08%.

Operation and maintenance expenses (year/RHC)

100,000MMK × 1.1208 = 112,080 MMK

3) Generator fuel cost

One generator (3kVA) will be provided for each RHC; operating time is expected 10 days/month and 1 hour/day. Fuel cost for Generator is calculated in consideration of inflation rate of 12.08%.

1.4ℓ/h × 1 hour × 10 days × 12months ×823MMK/ℓ×1.1208 = 154,996 MMK/year

4) Equipment consumables cost

Replacement of LED lamp for two examination lights; Once each three years

25,000MMK/lamp×2÷3years＝ 16,670 MMK/year

5) Maintenance Cost

1. Facilities/ Equipment

- Facilities repairing cost

  Although the facilities repairing cost varies year by year, the average for 10 years after completion of the Project is assumed to be 0.1 percent of the direct construction cost.

  13,500 JPY (Approx. 130,500 MMK)

- Equipment repairing cost

  The equipment repairing cost will be small for the first five years after the completion of the Project. However, after the five years, replacement of spare parts or equipment itself will be necessary. The average cost of equipment repair for first 10 years is assumed approximately 0.2 percent of the direct equipment cost.

  3,800 JPY (Approx. 38,000 MMK)

- Equipment Maintenance Cost

  Equipment maintenance is taken by CMSD in principle. Due to time constraints, sometimes CMSD cannot respond to repair and maintenance management for equipment, so the repair and maintenance will be done with the support of community and temples.

Even after the implementation of the Project, this situation will be same as before, accordingly this maintenance management system is supposed to continue.

2. Expected Budgetary Balance after completion of the Project

The personnel expenses of RHC are paid by MOH. And other expenses are paid by HA or community donations. Operation and maintenance cost of one RHC after completion of the Project is estimated to be 681,706 MMK. Personnel expenses are estimated to be 229,490MMK which will increase by 6 % from 2012. Meanwhile, the ordinary budget of MOH including the personnel expenses has increased by 32 % from 2006-2007, therefore the personnel expenses of each RHC are supposed to be ensured. Operation and maintenance cost of one RHC, excluding personnel expenses, which will increase from 200,000 MMK to 452,216 MMK per year, including the fuel cost for generators, will also be borne by the community and HA. Since RHCs have been established by the requests of communities, community leaders of each RHC have committed to provide the subsidies for operation and maintenance cost, if the increases is 200,000 ~ 300,000 MMK or less. Therefore operation and maintenance cost of each RHC is expected to be secured.

Table 2-24 Expense of Ministry of Health (Million MMK)

Year	2006-2007	2007-2008	2008-2009	2009-2010
Ordinary Budget	36,497	38,368	41,363	48,312
Capital Budget	10,718	10,379	10,081	15,689
Total Amount	47,215	48,747	51,443	64,001

(Source: MOH 2011)

(3) Medical Equipment Maintenance Cost

Estimation for annual maintenance cost for medical equipment with TSHs and STHs

The followings are the cost of spare parts to maintain the equipment:

Phototherapy Unit and blue lighted fluorescent tube @1,500x4≒6,000 yen/a year

Oxygen Generator and filter @1,500x2≒3,000 yen/a year

The cost of consumables and repairing of equipment for TSHs and STHs is excluded from the maintenance cost estimation of the Project since CMSD will cover the cost.

Chapter 3 Project Evaluation

3-1 Preconditions

In implementing the Project, the following components need to be carried out by the Myanmar side.

- To approve the upgrade of the 4 SHCs to 4 RHCs by June 2013.
- To transfer the ownership of the private project site(s) to the Village, the Township or the State by the time of the tender stage for construction works of the Project.
- To remove all existing facilities, trees and wells etc., and clean and level the Project site(s) by the time of the tender stage for construction works of the Project.
- To obtain the building permission (Design Approval) by the Construction Department, MOH, Myanmar by the commencement of construction works of the Project.
- To ensure customs duties and prompt customs clearance for the Project implementation.

3-2 Necessary Inputs by Recipient Country

In order to realize and maintain the effect of the Project, the following inputs need to be implemented by the Myanmar side.

- To secure necessary number of Health Staff to RHC of the Project by June 2014. Especially for the RHC upgraded from SHC, in addition to the present PHS-2 and MW, HA and LHV, each 1 person, should be secured by June 2014.
- To take necessary measures to promote facility birth in RHC, with IEC activities etc.
- To allocate the budget for operation and maintenance after completion of the Project. The budget for RHC includes that from communities and the budget for TSH and STH includes that from Magway DOH and the donations.
- The general furniture and utensils, which are not within the scope of the Project, shall be relocated from existing facilities. Other necessary items of furniture shall be furnished by the Myanmar side.

3-3 Important Assumptions

In order to realize the Project and to sustain it’s effect, the following assumptions need to be fulfilled.

- The access conditions to RHC/SHC should not be worse than the present conditions. The access roads to the Project sites should keep the minimum conditions which will not restrict the construction works remarkably. Besides, even after the completion of the Project, they should be maintained on some level to transfer patients to RHC/SHC or to transfer them from RHC/SHC to upper level medical facilities.
- Support by the communities continues. Assistance for the budget for operation and

maintenance by the communities should continue and the facility birth will be increased on.

3-4 Project Evaluation

3-4-1 Relevance

The Project is considered to be justifiable as Japan's Grant Aid in light of the following perspectives:

(1) Appropriateness

In October of 2011, a large scale flood damage occurred in the central dry area including Magway region and not a few medical facilities were heavily damaged with the consequences that the provision of appropriate medical services was hampered. Subsequently, emergency repair works were taken to reopen the affected facilities. Despite the emergency measures, the fact remains that the damage inflicted by the flood and due to the aging is severe to the extent that it jeopardizes the safety of patients. The target area includes 7 townships in Magway region which sustained heavy flood damage and the urgent need for a full-scale restoration by rebuilding the existing facilities is very high. In addition, the proportion of the poverty group in the region is 27 percent in excess of the national average of 25.6 percent in 2010. The Project is poised to provide the poverty group with adequate medical services and will be beneficial to the people of the region, accordingly.

(2) Necessity

When compared the health index of Magway region to that of the whole of Myanmar, the home birth rate is higher and facility birth rate is lower, while the infant mortality rate and under-five mortality rate are higher by 4.4 points and 3.6 points, respectively. This is due partly to the fact that proper health services are not provided because of the lack of, or the aging of RHCs and SHCs which have to serve as the first point of contact for local people with public medical services in the rural areas of the region. The situation is the same with both TSHs and STHs to which patients of RHCs and SHCs are to be referred. The Project is aimed to build necessary RHCs and supply necessary medical equipment for RHCs and SHCs. It is also the aim of the Project to provide appropriate medical equipment to TSHs and STHs with the purpose to provide a comprehensive primary health care service.

(3) Priority

The objective of the Project which consists of contributing to the improvement of medical facilities which play a vital role in providing the primary health care services in the 9 townships in Magway region is in conformity with that of "Expanding health care coverage and enhance the quality of health care" and "Accelerating rural health development activities" of the "National

Health Plan 2006-2011" of Myanmar.

In addition, the policy of the "Five Year Reproductive Health Program" implemented in December of 2008 which stipulates the need for an increase in assisted deliveries as well as prenatal and postnatal care by expert health care staff, and the increase in facility birth, is also in accordance with the construction of facilities and the supply of medical equipment for the improvement in delivery services at the RHCs.

3-4-2 Effectiveness

The effectiveness of the Project will be confirmed by the following indexes.

Table 3-1 Quantitative index

Index	Reference value (2012)	Target value (2018)
1. Service beneficiary (4 new RHCs will be built) (people)	0	80,000
2. Facility birth service beneficiary (people)	5,800	17,000
3. Facility birth (nos)	35	99

Table 3-2 Qualitative index

1. The building of new facilities and provision of new equipment will contribute to the improvement in the quality of the medical services provided.
2. The building of new facilities and provision of new equipment will contribute to favorable impressions among local people and the following effect can be expected: • The motivation of health care staff working for RHCs/SHCs, Township Hospitals and Station Hospitals will be enhanced. • The satisfaction of patients towards RHCs/SHCs, Township Hospitals and Station Hospitals will be heightened. • Awareness of facility birth will be enhanced.
3. Safety of local people will be improved because of the construction of natural disaster resistant medical centers (They can be used as evacuation shelters).

[Appendices]

1. Member List of the Study Team

1. Member List of the Study Team

(1) First Field survey (Jan. 15 ～ Feb. 4, 2012)

Name	Section	Period of Stay	Position
Mr. TOJO Yasuhiro	Team Leader	Jan. 28～Feb.2	Deputy Director General and Director for Health 2, Human Development Dept., JICA
Mr. YOSHIZAWA Shinobu	Cooperation Planning	Jan. 28～Feb.2	Staff, Health Division 3, Human Development Dept., JICA
Mr. KIMURA Takaaki	Chief Consultant/ Architectural Planning	Jan. 15～Feb.3	Yamashita Sekkei Inc.
Mr. HOSHIAI Yoshifumi	Deputy Chief Consultant/ Architectural Planning	Jan. 29～Feb. 3	Nippon Koei Co., Ltd.
Mr. TSUMOTO Tadayoshi	Architectural / Mechanical Design	Jan. 22～Feb.3	Yamashita Sekkei Inc.
Ms. ODAKA Miho	Architectural / Mechanical Design	Jan.15～Jan.27	Yamashita Sekkei Inc.
Mr. YASUMATSU Shigeru	Construction Planning / Procurement / Cost Estimate	Jan. 15～Feb.3	Yamashita Sekkei Inc.
Mr. KIMURA Shinichi	Equipment Planning	Jan.22～Jan. 27	Binko International Ltd.
Mr. OGASAWARA Tadashi	Health Planner / Equipment Procurement	Jan. 15～Feb.3	Binko International Ltd.

(2) Second Field Survey (Mar.11 ～ Apr. 7, 2012)

Name	Section	Period of Stay	Position
Mr. HOSHIAI Yoshifumi	Deputy Chief Consultant /Architectural Planning	Mar. 11～Apr. 7	Nippon Koei Co., Ltd.
Mr. KIMURA Kentaro	Natural Condition	Mar. 11～Apr. 7	Nippon Koei Co., Ltd.

(3) Third Field survey (May 20 ～ Jun. 16, 2012)

Name	Section	Period of Stay	Position
Mr. KOROKI Koichiro	Team Leader	Jun. 9～Jun.15	Senior Assistant Director, Human Development Dept. & Procurement Dept., JICA
Mr. YOSHIZAWA Shinobu	Cooperation Planning	Jun. 9～Jun.15	Staff, Health Division 3, Human Development Dept., JICA
Mr. KIMURA Takaaki	Chief Consultant / Architectural Planning	Jun. 9～Jun.15	Yamashita Sekkei Inc.
Mr. HOSHIAI Yoshifumi	Deputy Chief Consultant /Architectural Planning	May 20～Jun.16	Nippon Koei Co., Ltd.
Ms. ODAKA Miho	Architectural / Mechanical Design	May 20～Jun.16	Yamashita Sekkei Inc.
Mr. MIYOSHI Takayuki	Architectural / Mechanical Design	May 20～Jun.16	Nippon Koei Co., Ltd.
Mr. YASUMATSU Shigeru	Construction Planning / Procurement / Cost Estimate	May 20～Jun.16	Yamashita Sekkei Inc.
Mr. KIMURA Shinichi	Equipment Planning	May 20～Jun.16	Binko International Ltd.
Mr. OGASAWARA Tadashi	Health Planner / Equipment Procurement	May 21～Jun.10	Binko International Ltd.

(4) Explanation of Draft Final Report (Nov. 11 ～ Nov. 17, 2012)

Name	Section	Period of Stay	Position
Mr. KOROKI Koichiro	Team Leader	Nov. 11～Nov.17	Senior Assistant Director, Human Development Dept. & Procurement Dept., JICA
Ms. SAKAMOTO Ritsuko	Cooperation Planning	Nov. 11～Nov.19	Staff, Health Division 3, Human Development Dept., JICA
Mr. KIMURA Takaaki	Chief Consultant/Architectural Planning	Nov. 11～Nov.17	Yamashita Sekkei Inc.
Mr. KIMURA Shinichi	Equipment Planning	Nov. 11～Nov.17	Binko International Ltd.

2. Study Schedule

2. Study Schedule

(1) First Field Survey (Jan. 15, 2012 - Feb.4, 2012)

No.	Date		JICA Official	Consultant Team
1	2012/1/15	Sun		Narita→Bangkok→Yangon (Mr. T. KIMURA, Ms. ODAKA, Mr. YASUMATSU, Mr. OGASAWARA)
2	2012/1/16	Mon		・Meeting at JICA Office, Yangon→Naypyitaw ・Construction Material/Cost Survey in Yangon
3	2012/1/17	Tue		・Discuss with MOH ・Construction Material/Cost Survey in Yangon
4	2012/1/18	Wed		Naypyitaw→Magway ・Discuss with Magway Health Officer Yangon→Magway
5	2012/1/19	Thr		・Survey of Salin TSH, STH, RHC, SHC
6	2012/1/20	Fri		・Survey of Seik Phyu TSH, RHC, SHC
7	2012/1/21	Sat		・Survey of Pakokku GH, STH, RHC
8	2012/1/22	Sun		・Pakokku→Naypyitaw ・Narita→Bangkok→Yangon (Mr. TSUMOTO, Mr. S. KIMURA)
9	2012/1/23	Mon		・Discuss with MOH Yangon→Naypyitaw
10	2012/1/24	Tue		・Discuss with MOH
11	2012/1/25	Wed		・Discuss with MOH, MOC ・Construction Material Survey in Mandalay
12	2012/1/26	Thr		・Documentation, Team Meeting ・Data Collection at MOH ・Construction Material Survey in Mandalay
13	2012/1/27	Fri		・Documentation, Team Meeting ・Data Collection at MOH ・Construction Cost Survey in Yangon ・Naypyitaw→Yangon→Bangkok (Ms. ODAKA, Mr. S. KIMURA)
14	2012/1/28	Sat	Narita→Bangkok→Yangon	・Documentation, Team Meeting ・Construction Cost Survey in Yangon
15	2012/1/29	Sun	Yangon→Naypyitaw, Team	・Team Meeting ・Yangon→Naypyitaw, Team Meeting ・Narita→Bangkok→Yangon (Mr. HOSHIAI)
16	2012/1/30	Mon	・Discuss with MOH	・Discuss with MOH
17	2012/1/31	Tue	・Discuss with MOH	・Discuss with MOH ・Construction Material/Cost Survey in Yangon
18	2012/2/1	Wed	・Signing on M/D Naypyitaw→Yangon	・Signing on M/D, Documentation ・Construction Material/Cost Survey in Yangon
19	2012/2/2	Thr	・Report to JICA, EOJ Yangon→Bangkok	・Naypyitaw→Yangon、Report to EOJ and JICA ・Donor Survey ・Construction Material and Equipment Survey
20	2012/2/3	Fri	Narita	・Local Consultant Survey ・Donor Survey Yangon→Bangkok
21	2012/2/4	Sat		Narita

(2) Second Field Survey (Mar. 11, 2012 - Apr.7, 2012)

No	Date		Consultant Team
1	2012/3/11	Sun	Narita→Bangkok→Yangon (Mr. HOSHIAI, Mr. K. KIMURA)
2	2012/3/12	Mon	・Meeting at JICA and EOJ ・AMDA Survey ・Discuss with Local Consultant
3	2012/3/13	Tue	Yangon→Naypyitaw ・Discuss with MOH
4	2012/3/14	Wed	・Discuss with MOH
5	2012/3/15	Thu	・Discuss with Local Consultant
6	2012/3/16	Fri	・Discuss with MOH
7	2012/3/17	Sat	・Discuss with MOH
8	2012/3/18	Sun	・Documentation
9	2012/3/19	Mon	Naypyitaw→Natmauk ・Survey of Natmauk TSH, RHC
10	2012/3/20	Tue	・Meeting with Magwey Regional Health Officer ・Survey of Salin TSH, STH, SHC
11	2012/3/21	Wed	・Survey of Pauk TSH, RHC, SHC
12	2012/3/22	Thu	・Survey of Ya Sa Gyo TSH, RHC
13	2012/3/23	Fri	・Survey of Seik Phyu TSH, RHC, SHC
14	2012/3/24	Sat	・Survey of Myaing TSH, RHC
15	2012/3/25	Sun	・Documentation
16	2012/3/26	Mon	・Survey of Pakokku GH, RHC, SHC
17	2012/3/27	Tue	Nyaung-U→Naypyitaw
18	2012/3/28	Wed	・Discuss with MOH
19	2012/3/29	Thu	Naypyitaw→Yangon ・Report to JICA, EOJ ・Donor Survey
20	2012/3/30	Fri	・Team Meeting, Construction Material Survey Yangon→Bangkok (Mr. HOSHIAI)
21	2012/3/31	Sat	Yangon→Nyaung-U ・Survey of Seik Phyu STH and Saw TSH
22	2012/4/1	Sun	・Survey of Saw STH, RHC
23	2012/4/2	Mon	・Survey of Say Toke Ta Yar TSH
24	2012/4/3	Tue	・Survey of Say Toke Ta Yar RHC
25	2012/4/4	Wed	・Survey of Pakokku GH
26	2012/4/5	Thu	Nyaung-U→Yangon
27	2012/4/6	Fri	・Report to JICA Yangon→Bangkok
28	2012/4/7	Sat	Narita

(3) Third Field Survey (May. 20, 2012 - Jun.16, 2012)

No	Date		JICA Official	Consultant Team
1	2012/5/20	Sun		Narita→Bangkok→Yangon (Mr. HOSHIAI, Mr. MIYOSHI, Mr. S. KIMURA, Mr. YASUMATSU, Ms. ODAKA, Mr. OGASAWARA)
2	2012/5/21	Mon		・Meeting at JICA and EOJ ・Construction Cost Survey
3	2012/5/22	Tue		Yangon-Naypyitaw ・Discuss with MOH ・Construction Cost Survey
4	2012/5/23	Wed		・Discuss with MOH Naypyitaw→Magway
5	2012/5/24	Thu		・Survey of Natmauk TSH, STH, RHC
6	2012/5/25	Fri		・Survey of Say Toke Ta Yar TSH, STH, RHC
7	2012/5/26	Sat		・Survey of Slain TSH, STH, RHC
8	2012/5/27	Sun		・Team Meeting, Documentation
9	2012/5/28	Mon		・Survey of Pakokku GH, STH, RHC
10	2012/5/29	Tue		・Survey of Myaing TSH, STH, RHC ・Survey of Salin STH, RHC
11	2012/5/30	Wed		・Survey of Myaing STH, RHC
12	2012/5/31	Thu		・Survey of Ya Sa Gyo TSH, STH, RHC, SHC
13	2012/6/1	Fri		・Survey of Pauk RHC ・Survey of Pakokku RHC
14	2012/6/2	Sat		・Survey of Pauk TSH, STH, RHC
15	2012/6/3	Sun		・Team Meeting, Documentation
16	2012/6/4	Mon		・Survey of Saw TSH, RHC
17	2012/6/5	Tue		・Survey of Saw STH, RHC
18	2012/6/6	Wed		・Survey of Seik Phyu TSH, STH, RHC
19	2012/6/7	Thu		・Team Meeting, Documentation
20	2012/6/8	Fri		Nyaung-U→Naypyitaw ・Discuss with MOH
21	2012/6/9	Sat	Narita→Bangkok→Yangon	Narita→Bangkok→Yangon (Mr. T. KIMURA) ・Team Meeting, Documentation Naypyitaw→Yangon→Bangkok (Mr. OGASAWARA)
22	2012/6/10	Sun	Yangon-Naypyitaw Team Meeting	Yangon-Naypyitaw (Mr. T KIMURA) ・Team Meeting
23	2012/6/11	Mon	Discuss with MOH	・Discuss with MOH ・Team Meeting
24	2012/6/12	Tue	Discuss with MOH	・Discuss with MOH ・Facility Planning ・Donor Survey
25	2012/6/13	Wed	Signing of M/D Naypyitaw→Yangon	・Signing of M/D Naypyitaw→Yangon ・Construction Cost Survey
26	2012/6/14	Thu	Report to JICA and EOJ Yangon→Bangkok	・Report to JICA and EOJ ・Construction Material/Equipment Agent Survey
27	2012/6/15	Fri	Narita	・Construction Material/Equipment Agent Survey Yangon→Bangkok
28	2012/6/16	Sat		Narita

(4) Forth Field Survey (Nov. 11, 2012 - Nov.17, 2012)

No.	Date		JICA Official	Consultant Team
1	2012/11/11	Sun	Narita→Bangkok→Yangon	
2	2012/11/12	Mon	・Meeting at JICA Office,	
				・Discuss with MOH
3	2012/11/13	Tue	Yangon→Naypyitaw, Team	・Discuss with MOH
			・Discuss with MOH	・Construction Material/Cost Survey in Yangon
4	2012/11/14	Wed	・Discuss with MOH	Naypyitaw→Magway
			・Signing on M/D	・Discuss with Magway Health Officer
				Yangon→Magway
5	2012/11/15	Thr	Naypyitaw→Yangon	
6	2012/11/16	Fri	・Report to JICA, EOJ	・Survey of Seik Phyu TSH, RHC, SHC
			Yangon→Bangkok	
7	2012/11/17	Sat	Narita	

3. List of Parties Concerned in the Recipient Country

Organization		Division	Name	Position
MOH	**Dpt Health**			
			Dr. Min Than Nyut	Director General
			Dr. Nilar Thin	Dy Director General
			Dr. Htun Naiun Oo	ex. Director General
			Dr. Sow Wein	ex. Dy Director General
			Dr. Htun Naiun Oo	Director General
			Dr. Sow Wein	Dy Director General
			Dr. Win Mawng	Director, DC
		Public Health	Dr. Thein Thein Htay	Dy Director General
			Dr. Hla Mying	Director
			Dr. Thuzar Chit Tin	Dy Director
			Dr. Nang Nang Naing Si	Asst Director
			Dr. Myo Min	Asst Director, BHS
		Nursing	Ms. San Yi	Director
			Dr. Khin Dhnma Saw	Dy Director, NAP
		Planning	Mr. Nilar Tin	Director
		Medical Care	Mr. Thay Nawng	Director
			Mr. Khen Win Thet	Deputy Director
		Construction	Mr. Kyaw Kyaw Oo	Dy Director
	Regional Health Dpt			
		Regional Health Office, Magway	Dr. Zaw Htay	Regional Health Director
	DOH, Township Medical Dpt			
		Magway Township Medical Office	Dr. Hnin Zaw Thein	Township Medical Officer
		Salin Township Hospital, Salin TS	Dr. Ohrmor Aye	Township Medical Officer
			Dr.Nay Lin Shwe	Township Medical Officer
			Mr. Htay Loin	HA-1
			Ms. Win Win Htay	THN?
			Mr. Kyaw Naing Oo	UD?
			Ms. Thenda Soe	PHS-1
		Seikphyu Township Hospital, Seiphyu	Dr. Thon Thon Chit	Township Medical Officer
			Mr. Thein Naing	HA-1
		Pakkoku General Hospital, Pakkoku	Dr. Thinn Thinn Aye	Medical Super Intensive?
			Dr. Zaw Linn	Medical Supervisor
		Naung Kan Station Hospital, Magway	Dr. Thein Naing Lin	Station Medical Officer
		Lin Zin Station Hospital, Salin	Dr.Thet Khaing	Station Medical Officer
		Sin Phyu Kyun Station Hospital, Salin	Dr. San San Moe	Station Medical Officer
			Mr. Win Ko	PHS-1
			Ms. Ni Ni Aung	LHV
			Ms. Than Than Kyu	MW
			Ms. Nan Yu Myaing	MW
			Ms.Hlaiong Paw	Lab.tech.
			Ms. Thida Aye	SN
			Ms. Tin Tin Latt	SN
			Ms. Myint San	SN
		Myit Chay Station Hospital, Pakkoku	Dr. Myo Thein Hluin	Station Medical Officer
		Kan Bya RHC, Magway	Ms. Rhein Ohm Than	HA
			Ms. Than Than Hnin	LHV
			Mr. Than Htay	PHS-2

Organization		Division	Name	Position
		Ok Shit Kone RHC, Salin	Mr. Saw Win Khaing	HA
			Ms. Khin Aye Mu	LHV
			Ms. Ei Cho Lin	MW
			Mr. Myo Min Oo	PHS-2
			Mr. San Yu	Community Leader
		Auk Seik RHC, Seikphyu	Mr. Myint Swe	HA
		Let Se RHC, Seikphyu	Ms. Khim Mu	HA
			Ms. Wai Wai Myint	LHV
			Ms. Aye Aye Htay	MW
			Mr. Ko Myo Min Aung	PHS-2
		Lae Daing RHS, Pakkoku	Mr. Thet Mon Hking	HA
			Ms. Mar Mar Htay	LHV
			Ms. Lone Thant Htwe	MW
		Ywa Thin Ko RHC		
		Kyun Ywa RHC	Mr. Win Maw	HA
			Ms. Ei Ei Aung	MW
		New Ta Me SHC	Ms. Aye Aye Moe	MW
			Mr. Khin Mg Myint	Community Leader
		Naung Pin SHC	Ms. Win Win Thlet	MW
	Dpt Medeical Science			
		Nursing	New New Khin	Director
	Dpt Health Planning			
		Health Information	Thet Thet Mu	Director
MOC	**Bdg Dep**			
		Pulic Works	Mr. U Thein Oo	Superintending Engineer

4. Minutes of Discussion

4. Minutes of Discussion

(1) First Field Survey

MINUTES OF DISCUSSIONS
PREPARATORY SURVEY ON THE PROJECT FOR UPGRADING THE HEALTH FACILITIES IN CENTRAL MYANMAR
IN
THE REPUBLIC OF THE UNION OF MYANMAR

In response to a request from the Government of the Republic of the Union of Myanmar (hereinafter referred to as "Myanmar"), the Government of Japan decided to conduct a Preparatory Survey on the Project for Upgrading The Health Facilities In Central Myanmar (hereinafter referred to as "the Project") and entrusted the study to the Japan International Cooperation Agency (hereinafter referred to as "JICA") .

JICA sent to Myanmar the Preparatory Survey Team (hereinafter referred to as "the Team"), which is headed by Mr. Yasuhiro Tojo, Deputy Director General and Group Director for Health 2, Human Development Dept., JICA, and is scheduled to stay in the country from January 15 to February 3.

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

As a result of discussions and field survey, both parties confirmed the main items described in the attached sheets. Subject to the decision by the Government of Japan, JICA will conduct a Preparatory Survey Ⅱ on the Project.

Nay Pyi Taw, 1 February 2012

Yasuhiro TOJO
Team leader
Preparatory Survey Team
Japan International Cooperation Agency
Japan

Dr.Htun Naing Oo
Director General
Department of Health
Ministry of Health
The Republic of the Union of Myanmar

ATTACHMENT

1. Objective of the Project

The objective of the Project is to strengthen public health care service and the local referral system by improving its infrastructure and equipment of health facilities (mainly for Rural Health Center (hereinafter referred to as "RHC") and Sub Rural Health Center (hereinafter referred to as "SHC") in Magway Region (especially the damaged area by the flood occurred in last October).

2. Project site

(1) The site of the Project is Magway Region as follows.

a Townships damaged by flood in last October

(Pakokku, Seik Phyu, Pauk, Myaing, Salin, Saw and Say Toke Ta Yar)

b others

(2) The concrete Project sites in Magway Region will be decided through further analysis in Japan and discussion with authorities concerned in Myanmar.

3. Responsible and Implementing Agency

The responsible and implementing agency is Ministry of Health.

4. Contents of the project requested by the Government of Myanmar

After the discussions with the Team, Myanmar side requested on construction of RHC and procurement of Equipment for RHC, SHC, Station Hospital and Township Hospital.

The Team assessed the appropriateness of the request and will report the findings to the Government of Japan.

5. Japan's Grant Aid Scheme

5-1 Myanmar side understood the Japan's Grant Aid Scheme explained by the Team, as described in Annex-5.

5-2 Myanmar side will take the necessary measures, as described in Annex-6, for smooth implementation of the Project, as a condition for the Japan's Grant Aid to be implemented

6. Schedule of the Study

6-1. Myanmar side understood the schedule of the Survey; especially the field survey will be conducted four times (including this survey) and the main purpose of each field survey is as below.

(1) to discuss on the standard design and specification of facilities and equipment of RHC and SHC, criteria of selecting the Project sites and mutual understandings of basic conditions in order to formulate the Project.

(2) to confirm the existing conditions of all Project proposed sites.
(After analysis in Japan, the Project site will be decided)
(3) to formulate the outline design of facilities and equipment based on survey of all project sites and analysis in Japan
(after analysis in Japan, Draft Final Report will be made.)
(4) to explain and discuss the context of Draft Final Report

6-2. Based on the result of this survey, the Team will decide the Project proposed site, where the Team will conduct the second field survey further after approval of authorities concerned in Japan.

6-3. If the Government of Japan found the project feasible as a result of this Survey, JICA will send the second field survey team around March 2012.

7. Other relevant issues

7-1 The targets of the Project

(1) Both sides agreed that the Main targets of the Project will be below:
- Facilities: RHC
- Equipment: RHC, SHC

(2) Both sides agreed that in order to improve the health situation at local level, it is also necessary to improve not only the function of RHC and SHC, but also the function of upper-level health facilities like Station Hospital and Township Hospital. Major Equipment List for these Hospitals is described as annex-4. The Team will examine the possibility of procurement of equipment towards upper-level health facilities and report to Government of Japan. After getting approval from Government of Japan, the concrete equipment list will be modified according to the situation of each Project Site.

7-2 Criteria of selecting the Project site

Both sides agreed that the Project site will be selected according to the criteria below.

Priority	Facility	Equipment
1	Flood hazard area	Flood hazard area
2	Securing access road for vehicles of construction	Securing the health staff and the cost in operation and maintenance
	Securing land for facility construction and ensure to continue the health care service during the construction period	Securing the infrastructure such as water and electricity etc
3	Securing the health staff and the cost in operation and maintenance	
4	Securing the infrastructure such as water and electricity etc	

7-3 Possible Project Site

(1) Regarding the necessity of countermeasure against flood, the Team pointed out that

there are other flood hazard areas except areas shown as article 2(1) above in Magway Region. Both sides agreed that the information of hazard areas will be submitted by Myanmar side to JICA Myanmar Office until 15th February.

(2) In the areas shown as article 2(1), the Team found that some townships (Pakkokku, Seik Phyu, Pauk, Myaing and Salin) do not have enough number of RHC to meet the standard of MOH (allocation of one RHC per 20,000 population). Both sides agreed the Plan of new RHC allocation from 2012 in these areas with securing the land, and the community commitment (commitment letter from the community leaders etc) will be submitted by Myanmar side to JICA Myanmar Office as soon as possible.

7-4 Standard Facility Plan of RHC on the Project

Both sides agreed that the Standard Facility Plan of RHC on the Project will be modified based on the typical facility plan of RHC as annex 2 according to the situation of each Project Site and technical analysis.

7-5 Standard Equipment List for RHC and SHC

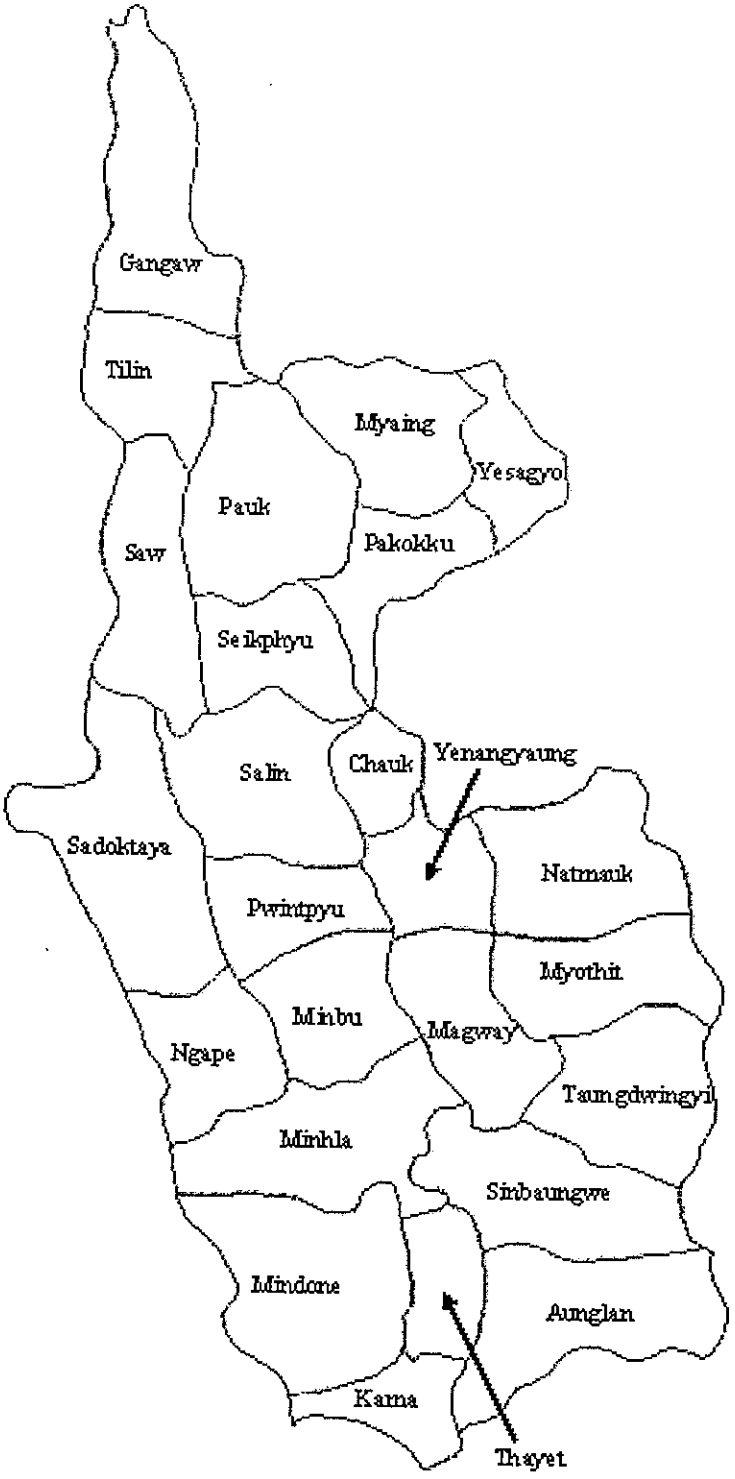
Both sides agreed that the Standard Equipment List for RHC and SHC is as annex 3. The concrete equipment list will be modified according to the situation of each Project Site.

END

Annex-1 Map of the Site
Annex-2 Typical Facility Plan of RHC
Annex-3 Standard Equipment List for RHC/SHC
Annex-4 Major Equipment List for Station Hospital / Township Hospital
Annex-5 JAPAN'S GRANT AID
Annex-6 Major Undertakings to be taken by Each Government

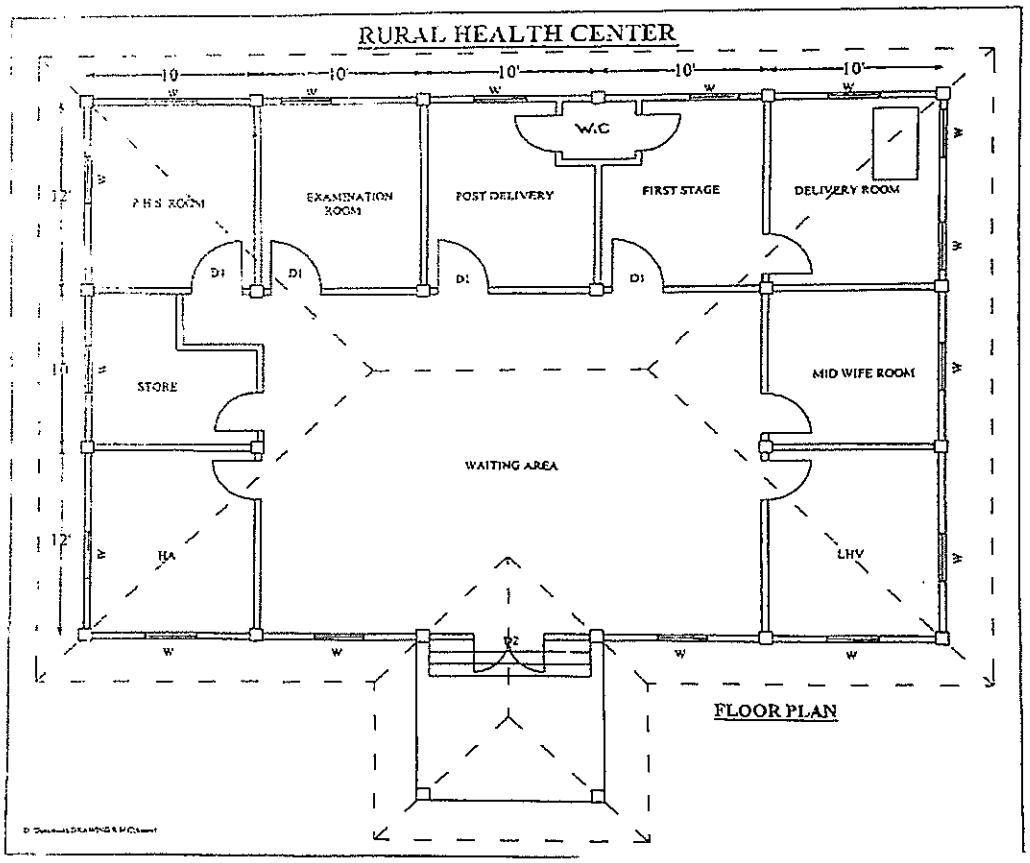
Annex-1 Map of the Site

Map of Magway Region



Annex-2 Typical Facility Plan of RHC

1. Typical Facility Plan of RHC on the Project



The Standard Facility Plan of RHC on the Project will be modified based on this typical facility plan of RHC according to the situation of each Project Site and technical analysis

2. **Components arranged by Myanmar Side**

- Staff Housing, if necessary
- Cooking service facility
- Laundry service facility
- Water Supply Sources (e.g. Deep well)
- Boundary fence and gates

Annex-3 Standard Equipment List for RHC/SHC

Facility	Section	Equipment		
RHC (Rural Health Center)				
	Outpatient Examination Room	Medical Staff desk & chair	Patient Stool	Examination Table
		Examination Lamp	Sphygmomanometer	Stethoscope
		Diagnostic Set	Treatment Instrument Set	Treatment Trolley
		Height Scale	Weighing Scale	Instrument Cabinet
		Medicine Cabinet	Ward Screen	Clothes basket
		Boiling Sterilizer, charcoal heating		
	MW.Obs. Consultants	Desk & Chair for MW	Patient Stool	Examination Table
		Examination Lamp	Sphygmomanometer	Stethoscope
		Fetus Stethoscope	Obstetric Examination Table	Obstetric Examination Set
		Treatment Trolley	Height Scale	Weighing Scale
		Instrument Cabinet	Medicine Cabinet	Ward Screen
		Clothes basket	Boiling Sterilizer, charcoal heating	
	Midwife	Midwife Kit (Clearn Delivery Kit, Thermometer, Scissors, Forceps, Kidney Tray, Gloves, Instrument Box etc)		
	First Stage Delivery Room	Labor Bed	Treatment Trolley	Medicine Cabinet
		Working Table		
	Delivery Room	Delivery Table	I.V. Stand	Treatment Trolley
		Examination Lamp	Delivery Instrument Set	Infant Treatment Table
		Infant Weighing Scale	Working Table	Boiling Sterilizer, charcoal heating
	Post Delivery Room	Recovery Bed	Ward Screen	Baby Cot
		Stretcher, Army Type		
	Lady Health Visitor Room	Desk & Chair for LHV	Patient Stool	Examination Table
		Examination Lamp	Locker Cabinet	
		LHV Kit (Clearn Delivery Kit, Thermometer, Scissors, Forceps, Kidney Tray, Gloves, Instrument Box etc)		
	Public Health Supervisor Room	Desk & Chair for PHS	Locker Cabinet	
	Health Assistant Room	Desk & Chair for HA	Patient Stool	Examination Table
		Examination Lamp	Locker Cabinet	
		HA Kit (Snake Bit Kit, Thermometer, Forceps, Scissors, Alcohol Lamp, Tape-Measure, Gloves)		
	Store	Working Table	Locker Cabinet	
SHC (Sub Rural Health Center)				
	Outpatient	Examination Instrument set	Sphygmomanometer	Stethoscope
		Weighing Scale	SHC Diagnostic Instrument Set	
	Midwife	Midwife Kit (Clearn Delivery Kit, Thermometer, Scissors, Forceps, Kidney Tray, Gloves, Instrument Box etc)		

Annex-4 Major Equipment List for Station Hospital / Township Hospital

Facility	Section	Equipment		
Township Hospital				
	Obstetrics Section	Anesthesia Machine	Delivery Set (Instrument)	Suction Machine
		Autoclave	Operating Lamp, Mobile	Infant Incubator
		Ultrasound Scanner	Diathermy Machine	
Station Hospital				
	Obstetrics Section	Anesthesia Machine	Delivery Set (Instrument)	Suction Machine
		Autoclave	Operating Lamp, Mobile	Infant Incubator
		Ultrasound Scanner	Diathermy Machine	

JAPAN'S GRANT AID

The Government of Japan (hereinafter referred to as "the GOJ") is implementing the organizational reforms to improve the quality of ODA operations, and as a part of this realignment, a new JICA law was entered into effect on October 1, 2008. Based on this law and the decision of the GOJ, JICA has become the executing agency of the Grant Aid for General Projects, for Fisheries and for Cultural Cooperation, etc.

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

1. Grant Aid Procedures

The Japanese Grant Aid is supplied through following procedures :

- ·Preparatory Survey
  - The Survey conducted by JICA
- ·Appraisal &Approval
  - -Appraisal by the GOJ and JICA, and Approval by the Japanese Cabinet
- ·Authority for Determining Implementation
  - -The Notes exchanged between the GOJ and a recipient country
- ·Grant Agreement (hereinafter referred to as "the G/A")
  - -Agreement concluded between JICA and a recipient country
- ·Implementation
  - -Implementation of the Project on the basis of the G/A

2. Preparatory Survey

(1) Contents of the Survey

The aim of the preparatory Survey is to provide a basic document necessary for the appraisal of the Project made by the GOJ and JICA. The contents of the Survey are as follows:

- Confirmation of the background, objectives, and benefits of the Project and also institutional capacity of relevant agencies of the recipient country necessary for the implementation of the Project.
- Evaluation of the appropriateness of the Project to be implemented under the Grant Aid Scheme from a technical, financial, social and economic point of view.
- Confirmation of items agreed between both parties concerning the basic concept of the Project.

- Preparation of a outline design of the Project.
- Estimation of costs of the Project.

The contents of the original request by the recipient country are not necessarily approved in their initial form as the contents of the Grant Aid project. The Outline Design of the Project is confirmed based on the guidelines of the Japan's Grant Aid scheme.

JICA requests the Government of the recipient country to take whatever measures necessary to achieve its self-reliance in the implementation of the Project. Such measures must be guaranteed even though they may fall outside of the jurisdiction of the organization of the recipient country which actually implements the Project. Therefore, the implementation of the Project is confirmed by all relevant organizations of the recipient country based on the Minutes of Discussions.

(2) Selection of Consultants

For smooth implementation of the Survey, JICA employs (a) registered consulting firm(s). JICA selects (a) firm(s) based on proposals submitted by interested firms.

(3) Result of the Survey

JICA reviews the Report on the results of the Survey and recommends the GOJ to appraise the implementation of the Project after confirming the appropriateness of the Project.

3. Japan's Grant Aid Scheme

(1) The E/N and the G/A

After the Project is approved by the Cabinet of Japan, the Exchange of Notes(hereinafter referred to as "the E/N") will be signed between the GOJ and the Government of the recipient country to make a pledge for assistance, which is followed by the conclusion of the G/A between JICA and the Government of the recipient country to define the necessary articles to implement the Project, such as payment conditions, responsibilities of the Government of the recipient country, and procurement conditions.

(2) Selection of Consultants

In order to maintain technical consistency, the consulting firm(s) which conducted the Survey will be recommended by JICA to the recipient country to continue to work on the Project's implementation after the E/N and G/A.

(3) Eligible source country

Under the Japanese Grant Aid, in principle, Japanese products and services including transport or those of the recipient country are to be purchased. When JICA and the Government of the recipient country or its designated authority

deem it necessary, the Grant Aid may be used for the purchase of the products or services of a third country. However, the prime contractors, namely, constructing and procurement firms, and the prime consulting firm are limited to "Japanese nationals".

(4) Necessity of "Verification"

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

(5) Major undertakings to be taken by 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 Annex.

(6) "Proper Use"

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

(7) "Export and Re-export"

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

(8) Banking Arrangements (B/A)

a) The Government of the recipient country or its designated authority should open an account under the name of the Government of the recipient country in a bank in Japan (hereinafter referred to as "the Bank"). JICA will execute the Grant Aid by making payments in Japanese yen to cover the obligations incurred by the Government of the recipient country or its designated authority under the Verified Contracts.

b) The payments will be made when payment requests are presented by the Bank to JICA under an Authorization to Pay (A/P) issued by the Government of the recipient country or its designated authority.

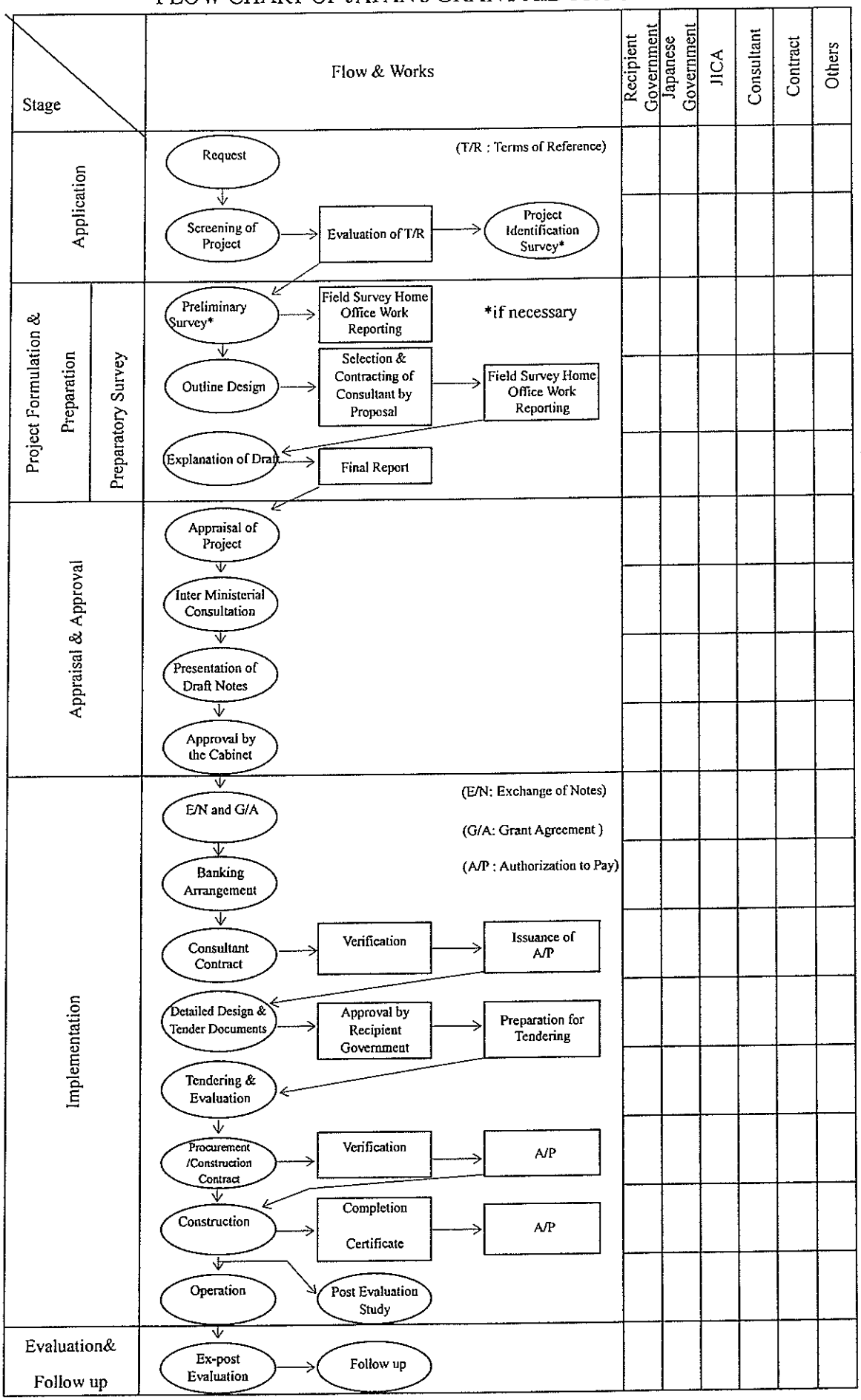
(9) Authorization to Pay (A/P)

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

(10) Social and Environmental Considerations

A recipient country must carefully consider social and environmental impacts by the Project and must comply with the environmental regulations of the recipient country and JICA socio-environmental guidelines.

FLOW CHART OF JAPAN's GRANT AID PROCEDURES



Major Undertakings to be taken by Each Government

No.	Items	To be covered by Grant Aid	To be covered by Recipient Side
1	to secure lots of land necessary for the implementation of the Project and to clear the sites;		●
2	To construct the following facilities		
	1) The building	●	
	2) The gates and fences in and around the site		●
	3) The parking lot	●	
	4) The road within the site	●	
	5) The road outside the site		●
3	To provide facilities for distribution of electricity, water supply and drainage and other incidental facilities necessary for the implementation of the Project outside the sites		
	1) Electricity		
	a. The distributing power 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 elevated tanks)	●	
	3) Drainage		
	a. The city drainage main (for storm sewer and others to the site)		●
	b. The drainage system (for toilet sewer, common waste, storm drainage and others) within the site	●	
	4) Gas Supply		
	a. The city gas main to the site		●
	b. The gas supply system within the site	●	
	5) 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	●	
	6) Furniture and Equipment		
	a. General furniture		●
	b. Project equipment	●	
4	To ensure prompt unloading and customs clearance of the products at ports of disembarkation in the recipient country and to assist internal transportation of the products		
	1) Marine (Air) transportation of the Products from Japan to the recipient country	●	
	2) Tax exemption and custom clearance of the Products at the port of disembarkation		●
	3) Internal transportation from the port of disembarkation to the project site	●	
5	To ensure that customs duties, internal taxes and other fiscal levies which may be imposed in the recipient country with respect to the purchase of the products and the services be exempted		●
6	To accord Japanese nationals whose services may be required in connection with the supply of the products and the services such facilities as may be necessary for their entry into the recipient country and stay therein for the performance of their work		●
7	To ensure that the Facilities and the products be maintained and used properly and effectively for the implementation of the Project		●
8	To bear all the expenses, other than those covered by the Grant, necessary for the implementation of the Project		●
9	To bear the following commissions paid to the Japanese bank for banking services based upon the B/A		
	1) Advising commission of A/P		●
	2) Payment commission		●

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

(2) Third Field Survey

MINUTES OF DISCUSSIONS
PREPARATORY SURVEY ON THE PROJECT FOR UPGRADING THE HEALTH FACILITIES IN CENTRAL MYANMAR
IN
REPUBLIC OF THE UNION OF MYANMAR

In response to a request from the Government of Republic of the Union of Myanmar (hereinafter referred to as "Myanmar"), the Government of Japan decided to conduct a Preparatory Survey on the Project for Upgrading the Health Facilities in Central Myanmar (hereinafter referred to as "the Project") and entrusted the study to the Japan International Cooperation Agency (hereinafter referred to as "JICA") .

JICA sent to Myanmar the 3rd Preparatory Survey Team (hereinafter referred to as "the Team"), which is headed by Mr. Koichiro Koroki, Senior Assistant Director, Human Development Dept., JICA, and is scheduled to stay in the country from May 20 to June 15 2012.

The Team held discussions with the officials concerned from the Myanmar side and conducted a field survey at the study area.

In the course of discussions and field survey, both parties confirmed the main items described in the attached sheets. The Team will proceed to further works and prepare the Preparatory Survey Report.

Nay Pyi Taw, 13 June 2012

Koichiro Koroki
Team leader
Preparatory Survey Team
Japan International Cooperation Agency
Japan

Dr. Min Than Nyunt
Acting Director General
Department of Health
Ministry of Health
Republic of the Union of Myanmar

ATTACHMENT

1. Objective of the Project

The objective of the Project is to strengthen public health care service and the local referral system by improving its infrastructure and equipment of health facilities (mainly for Rural Health Center [hereinafter referred to as "RHC"] and Sub Rural Health Center [hereinafter referred to as "SHC"]) in Magway Region (especially the damaged area by the flood occurred in last October).

2. Project sites

The sites of the Project are Magway Region as follows.

Pakokku, Seik Phyu, Pauk, Myaing, Salin, Saw, Say Toke Ta Yar, Ya Sa Gyo and Natmaut.

3. Responsible and Implementing Agency

The Responsible and Implementing Agency is Ministry of Health.

4. Contents of the Project requested by the Government of Myanmar

After discussions with the Team, the Myanmar side requested on construction of RHCs and procurement of equipment for RHCs, SHCs, station hospitals and township hospitals (including general hospital in Pakokku) .

The Team will assess the appropriateness of the request and will report the findings to the Government of Japan.

5. Japan's Grant Aid Scheme

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

5-2 The Myanmar side will take the necessary measures, as described in Annex-5, for smooth implementation of the Project, as a condition for the Japan's Grant Aid to be implemented.

6. Schedule of the Study

6-1 JICA will prepare the draft report in English and dispatch the mission in order to explain its contents late in September 2012.

6-2 In case that the contents of the report are accepted in principle by the Myanmar side, JICA will complete the Preparatory Survey Report and send it to the Myanmar side by late in November 2012.

7. Other relevant issues

7-1 Possible sites and components of the Project

(1) Both sides agreed that possible sites and component of the Project shown in Annex 1.

(2) The concrete Project sites in Magway region will be decided through further analysis in Japan and discussion with authorities concerned in Myanmar.

7-2 Priority of the Project site

Both sides agreed that the Project sites will be selected according to the priority below.

1) Pakokku, Seik Phyu, Pauk, Myaing,
2−1) Natmaut
2−2)Salin
2−3)Say Toke Ta Yar
2−4)Saw
3) Ya Sa Gyo

7-3 Priority of the targeted facilities

Both sides agreed that the priority of components of the Project is below.

(1) construction of RHCs
(2) provision of medical equipment to RHCs/SHCs
(3) provision of medical equipment to township hospitals(including general hospital in Pakokku)
(4) provision of medical equipment to station hospitals

7-4 Selection of the Project site and component

Both side agreed that the Project sites and components are selected following procedure mentioned below.

(1) Fix target areas in accordance with the priority described in 7-2 above.
(2) In selected areas mentioned 7-4(1) above, examine the component of health facilities in order of the priority described in 7-3 above.
(3) Regarding provision of medical equipment for SHC, the Project will cover all SHCs in selected areas mentioned 7-4(1) above.

7-5 Facility Plan of RHC on the Project

(1) Both sides agreed that the facility plan of RHC on the Project will be modified based on the standard facility plan of RHC according to the situation of each Project site and technical analysis as shown in Annex 2.
(2) Detailed plan for each facilities will be confirmed respectively late in September, 2012.

7-6 Standard Equipment List of the Project

(1) Both sides agreed that the standard equipment list for township hospitals(including general hospital in Pakokku), station hospitals, RHC and SHC is as Annex 3.
(2) The concrete equipment list will be modified according to the situation of each project site.
(3) Detailed plan for each facility will be confirmed respectively late in September, 2012.

7-7 Undertakings taken by the Myanmar side

(1) The Myanmar side agreed to allocate necessary staff (at least HA 1, LHV 1, PHS-2 and MW).

(2) The Myanmar side agreed to arrange to bear cost for operation and maintenance, including support from community.

7-8 The Team pointed out that facility birth rate in Magway region is not so high. The Myanmar side agreed to take necessary measures to increase facility birth rate such as IEC activity using IEC materials developed by JICA "Community-Oriented Reproductive Health Project" in order to utilize health facilities constructed and improved by the Project.

END

Annex-1 Possible sites and component of the Project
Annex-2 Standard facility plan of RHC on the Project
Annex-3 Standard equipment list of the Project
Annex-4 JAPAN'S GRANT AID
Annex-5 Major Undertakings to be taken by Each Government

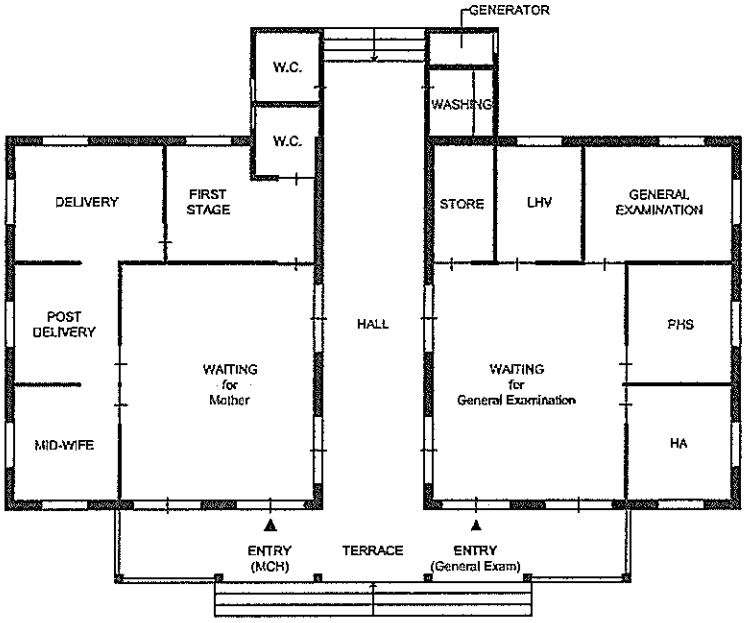
Annex-1 Possible sites and component of the Project

Township	No.	Name	Category	Component of Construction of A	Component of Construction of Variation	Component of medical equipment	NOTE
Pakokku		Pakokku	GeH			O	
	109	Kan Ma	STH			O	
	110	Myit Chay	STH			O	
	111	Kaing	STH			O	
	112	Lay Taing	RHC	*		O	
	114	Seik Kha Wa	RHC			O	
	115	Ywa Thit Kone	RHC	*		O	
	116	Hta Naung Kone	RHC			O	
	112(3)	Taugpalu	RHC	*		O	Upgrade from SHC
Seik Phyu		Seik Phyu	TSH			O	
	144	Kan Zun Ma	STH			O	
	145	Auk Seik	RHC	*		O	
	146	Lat Sail	RHC	*		O	
	147	Inn Gan	RHC	*		O	
	144(3)	Kyaung Yuan	RHC	*		O	Upgrade from SHC
Pauk		Pauk	TSH			O	
	136	Ze Bya	STH			O	
	137	Kaing Be	RHC			O	
	138	Kyauk Taing Hin	RHC	*		O	
	139	Ye Bya	RHC	*		O	
	140	Nant Thar	RHC	*		O	
	141	Tan Zu	RHC			O	
	142	Chaung Gu	RHC	*		O	
	143	Htun Taw	RHC			O	
	137(5)	Chin Shay	SHC			O	
Myaing		Myaing	TSH			O	
	128	Let Yat Ma	STH			O	
	129	Ba Hin Shu	STH			X	New Hospital
	130	Wei Taung	RHC			O	
	131	Kan Net	RHC	*		O	
	132	Lim ka Taw	RHC	*		O	
	133	Ma Gyi Kan	RHC	*		O	Upgrade from SHC
	134	Kaing Taw Ma	RHC			O	
	135	Kyauk Sauk	RHC	*		O	
Natmaut		Natmaut	TSH			O	
	26	Shwepntaw	STH			O	
	27	Tharhmyar	RHC	*		O	
	28	Saingkaung	RHC	*		O	
	29	Inngan	RHC			O	
	30	Tatnaewun	RHC	*		O	
	31	Thahmonekonegyi	RHC	*		O	
	32	Hpankharsangyi	RHC			O	
Salin		Salin	TSH			O	
	53	Sin Phyu Gyun	STH			O	
	54	Lin Zin	STH			O	
	55	Ta Nyaung	STH			O	
	56	Phaung Lin	RHC		*	O	
	57	Tha Yet Taw	RHC			O	
	58	Oak Shit Kone	RHC			O	
	59	Nga Than Gaung	RHC	*		O	
	54(3)	Kan Pyar	RHC	*		O	Upgrade from SHC
	58(1)	Sin Ma Kty	RHC	*		O	Upgrade from SHC
	60(1)	Thanatkone	RHC	*		O	Upgrade from SHC
Say Toke Ta Yar		Say Toke Ta Yar	TSH			O	
	71	Ta Pwin	STH			X	No Doctor
	72	Kyee Wa	RHC	*		O	
	73	Pha Aing	RHC	*		O	
	74	Khwe Ma Laung	RHC			O	
	75	Ohn Wa	RHC			O	
Saw		Saw	TSH			O	
	161	Kyauk Htu	STH			O	
	162	Laung Shee	STH			X	No Doctor
	163	Mi Ai	RHC	*		O	
	164	Nyaung Bin	RHC			O	
	165	Neg Pya Kyin	RHC			O	
	166	Ka Chaung	RHC	*		O	
	167	Ta Byin	RHC	*		O	
Ya Sa Gyo		Ya Sa Gyo	TSH			O	
	118	Mye Taw	STH			O	
	119	Ma Oo	STH			O	
	120	Pa Khan Gyi	STH			O	
	121	Kyat Su Kyin	STH			O	
	122	Sin Ma Ye	RHC	*		O	
	123	Kokko Su	RHC	*		O	
	124	Kyu Ywa	RHC			O	
	125	Khwe Hanyoke	RHC	*		O	
	126	Sin Te	SHC			O	
	127	Thit Gyi Taw	RHC	*		O	Upgrade from SHC
	122(1)	Koe Yint	SHC			O	
				32	1	76	

Abbreviation
GeH…General Hospital
TSH…Township Hospital
STH…Station Hospital
RHC…Rural Health Center
SHC…Sub Rural Health Center

Annex-2 Standard Facility Plan of RHC on the Project

Maternal and Child (MCH)



General Clinic

A Aprox. 200m2

0 5 10m

0 10 20 30feet

Annex 3 Standard equipment list of the Project.

Facility	Section	Equipment
Township Hospital		
	obstetrics Section	Operating Lamp, Mobile
		Operating Table
		Infant incubator (open type warmer)
		Phototherapy Unit, Single Beam
		Autoclave electorical type
		Autoclave Charcoal
		Normal Delivery Instrument Set
		Delivery Table
		Labor and Recovery bed
		Caesarean operation Instrument Set
		Suction Unit (electric)
		Low Pressure continuou suction unit (electric)
		Vaccum Extractor suction manual
		Vaccum Extractor suction electric
		Oxgen Generator
RHC (Rural Health Center) for new Construction facility		
	Outpaitent Examination Room	Medical Staff desk & chair
		Patient Stool
		Examination Table
		Examination Lamp
		Sphygmomanometer
		Stethoscope
		Diagnostic Set
		Treatment Instrument Set
		Treatment Trolley
		height Scale
		Weighing Scale
		Instrument Cabinet
		Medicine Cabinet
		Ward Screen
		Clothes basket
		Boiling Sterilizer、charcoal heating
	MW.Obs. Consultants	Desk & chair for MW
		Examination Table
		Sphygmomanometer
		Stethoscope
		Fetus Stethoscope
		Obstetric Examination Set
		Treatment Trolley
	Midwife	Midwife Kit
	First Stage Delivery Room	Labor Bed
		Treatment Trolley
		Medicine Cabinet
		Working Table
	Delivery Room	Delivery Table
		I.V. Stand
		Treatment Trolley
		Examination Lamp
		Delivery instrument set
		Infant Treatment Table
		Infant Weighing Scale
		Working Table
	Post Delivery Room	Recovery Bed
		Bayby Cot
	Lady Health Vistor Room	Desk & chair for LHV
		Locker Cabinet
		LHV/Midwife Kit
	Public Health Supervisor Roor	Desk & chair for PHS
		Locker Cabinet
		Public Health Supervisor Kit
	Health Assistant Room	Desk & chair for HA
		Locker Cabinet
		Health Assistant Kit
	Store	Working Table
		Locker Cabinet

Facility	Section	Equipment
Station Hospital		
	obstetrics Section	Operating Lamp, Mobile
		Operating Table
		Infant incubator (open type warmer)
		Phototherapy Unit, Single Beam
		Autoclave Charcoal
		Normal Delivery Instrument Set
		Delivery Table
		Labor and Recovery bed
		Caesarean operation Instrument Set
		Suction Unit
		Vaccum Extractor suction manual
		Oxgen Generator
RHC (Rural Health Center) For existing facility		
	Outpaitent Examination Room	Instrument Cabinet
		Medicine Cabinet
		Ward Screen
		Boiling Sterilizer、charcoal heating
		Examination Table
		Sphygmomanometer
		Stethoscope
		Fetus Stethoscope
	Midwife	Midwife Kit
	First Stage Delivery Room	Labor Bed
	Delivery Room	Delivery Table
		I.V. Stand
		* * Examination Lamp with solar battery
		Delivery instrument set
		Infant Weighing Scale
		Bayby Cot
		Public Health Supervisor Kit
		LHV/Midwife Kit
		Health Assistant Kit
SHC (Sub-Rural Health Center)		
	Midwife	Midwife Kit

* *
Examination Lamp with solar battery will be considered to supply with only RHC which power supply condition would not be stable.

JAPAN'S GRANT AID

The Government of Japan (hereinafter referred to as "the GOJ") is implementing the organizational reforms to improve the quality of ODA operations, and as a part of this realignment, a new JICA law was entered into effect on October 1, 2008. Based on this law and the decision of the GOJ, JICA has become the executing agency of the Grant Aid for General Projects, for Fisheries and for Cultural Cooperation, etc.

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

1. Grant Aid Procedures

The Japanese Grant Aid is supplied through following procedures :

・Preparatory Survey
- The Survey conducted by JICA

・Appraisal &Approval
-Appraisal by the GOJ and JICA, and Approval by the Japanese Cabinet

・Authority for Determining Implementation
-The Notes exchanged between the GOJ and a recipient country

・Grant Agreement (hereinafter referred to as "the G/A")
-Agreement concluded between JICA and a recipient country

・Implementation
-Implementation of the Project on the basis of the G/A

2. Preparatory Survey

(1) Contents of the Survey

The aim of the preparatory Survey is to provide a basic document necessary for the appraisal of the Project made by the GOJ and JICA. The contents of the Survey are as follows:

- Confirmation of the background, objectives, and benefits of the Project and also institutional capacity of relevant agencies of the recipient country necessary for the implementation of the Project.
- Evaluation of the appropriateness of the Project to be implemented under the Grant Aid Scheme from a technical, financial, social and economic point of view.
- Confirmation of items agreed between both parties concerning the basic concept of the Project.

- Preparation of a outline design of the Project.
- Estimation of costs of the Project.

The contents of the original request by the recipient country are not necessarily approved in their initial form as the contents of the Grant Aid project. The Outline Design of the Project is confirmed based on the guidelines of the Japan's Grant Aid scheme.

JICA requests the Government of the recipient country to take whatever measures necessary to achieve its self-reliance in the implementation of the Project. Such measures must be guaranteed even though they may fall outside of the jurisdiction of the organization of the recipient country which actually implements the Project. Therefore, the implementation of the Project is confirmed by all relevant organizations of the recipient country based on the Minutes of Discussions.

(2) Selection of Consultants

For smooth implementation of the Survey, JICA employs (a) registered consulting firm(s). JICA selects (a) firm(s) based on proposals submitted by interested firms.

(3) Result of the Survey

JICA reviews the Report on the results of the Survey and recommends the GOJ to appraise the implementation of the Project after confirming the appropriateness of the Project.

3. Japan's Grant Aid Scheme

(1) The E/N and the G/A

After the Project is approved by the Cabinet of Japan, the Exchange of Notes(hereinafter referred to as "the E/N") will be signed between the GOJ and the Government of the recipient country to make a pledge for assistance, which is followed by the conclusion of the G/A between JICA and the Government of the recipient country to define the necessary articles to implement the Project, such as payment conditions, responsibilities of the Government of the recipient country, and procurement conditions.

(2) Selection of Consultants

In order to maintain technical consistency, the consulting firm(s) which conducted the Survey will be recommended by JICA to the recipient country to continue to work on the Project's implementation after the E/N and G/A.

(3) Eligible source country

Under the Japanese Grant Aid, in principle, Japanese products and services including transport or those of the recipient country are to be purchased. When JICA and the Government of the recipient country or its designated authority

deem it necessary, the Grant Aid may be used for the purchase of the products or services of a third country. However, the prime contractors, namely, constructing and procurement firms, and the prime consulting firm are limited to "Japanese nationals".

(4) Necessity of "Verification"

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

(5) Major undertakings to be taken by 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 Annex.

(6) "Proper Use"

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

(7) "Export and Re-export"

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

(8) Banking Arrangements (B/A)

a) The Government of the recipient country or its designated authority should open an account under the name of the Government of the recipient country in a bank in Japan (hereinafter referred to as "the Bank"). JICA will execute the Grant Aid by making payments in Japanese yen to cover the obligations incurred by the Government of the recipient country or its designated authority under the Verified Contracts.

b) The payments will be made when payment requests are presented by the Bank to JICA under an Authorization to Pay (A/P) issued by the Government of the recipient country or its designated authority.

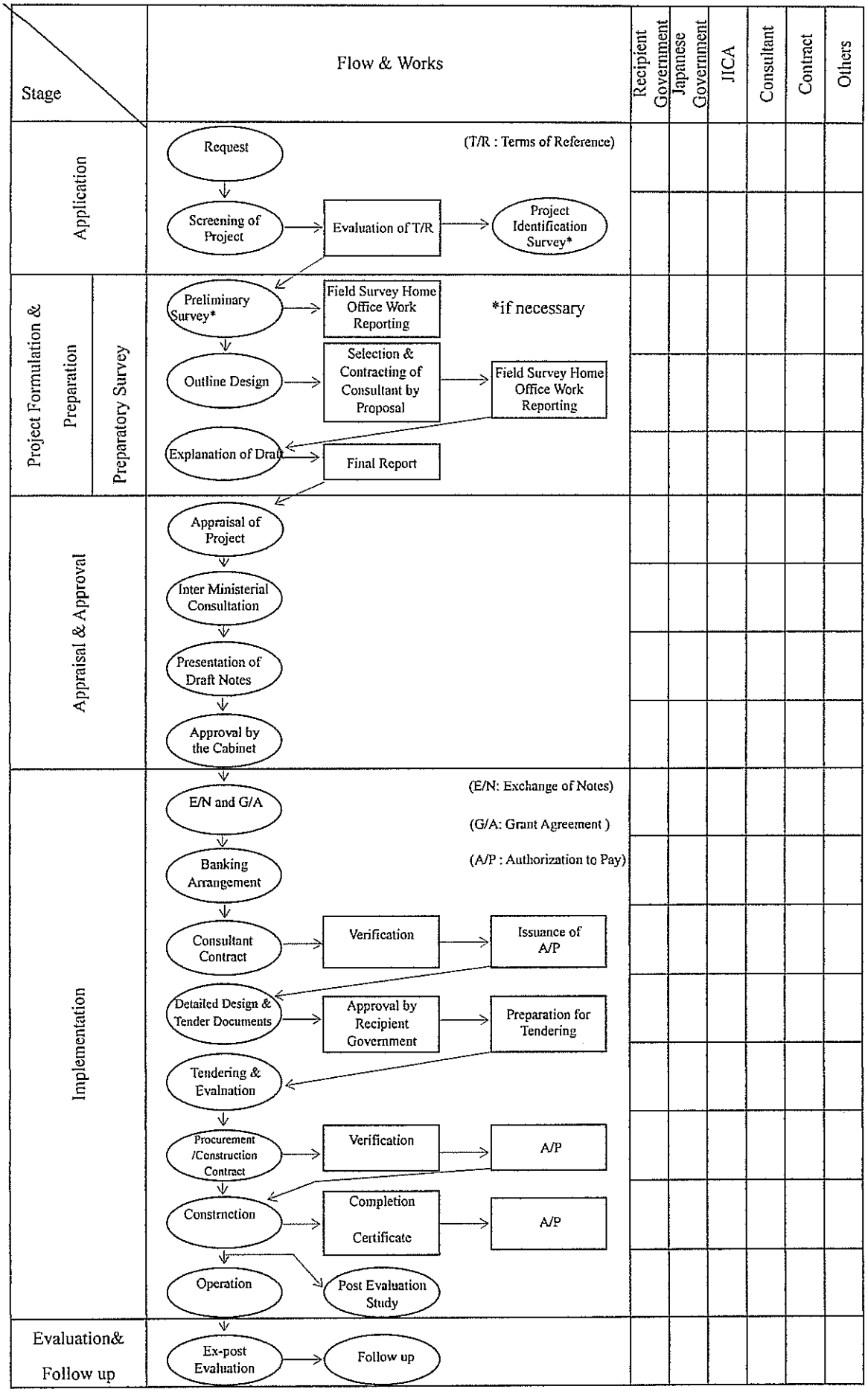
(9) Authorization to Pay (A/P)

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

(10) Social and Environmental Considerations

A recipient country must carefully consider social and environmental impacts by the Project and must comply with the environmental regulations of the recipient country and JICA socio-environmental guidelines.

FLOW CHART OF JAPAN's GRANT AID PROCEDURES



Major Undertakings to be taken by Each Government

No.	Items	To be covered by Grant Aid	To be covered by Recipient Side
1	to secure lots of land necessary for the implementation of the Project and to clear the sites;		●
2	To construct the following facilities		
	1) The building	●	
	2) The gates and fences in and around the site		●
	3) The parking lot	●	
	4) The road within the site	●	
	5) The road outside the site		●
3	To provide facilities for distribution of electricity, water supply and drainage and other incidental facilities necessary for the implementation of the Project outside the sites		
	1) Electricity		
	a. The distributing power 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 elevated tanks)	●	
	3) Drainage		
	a. The city drainage main (for storm sewer and others to the site)		●
	b. The drainage system (for toilet sewer, common waste, storm drainage and others) within the site	●	
	4) Gas Supply		
	a. The city gas main to the site		●
	b. The gas supply system within the site	●	
	5) 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	●	
	6) Furniture and Equipment		
	a. General furniture		●
	b. Project equipment	●	
4	To ensure prompt unloading and customs clearance of the products at ports of disembarkation in the recipient country and to assist internal transportation of the products		
	1) Marine (Air) transportation of the Products from Japan to the recipient country	●	
	2) Tax exemption and custom clearance of the Products at the port of disembarkation		●
	3) Internal transportation from the port of disembarkation to the project site	●	
5	To ensure that customs duties, internal taxes and other fiscal levies which may be imposed in the recipient country with respect to the purchase of the products and the services be exempted		●
6	To accord Japanese nationals whose services may be required in connection with the supply of the products and the services such facilities as may be necessary for their entry into the recipient country and stay therein for the performance of their work		●
7	To ensure that the Facilities and the products be maintained and used properly and effectively for the implementation of the Project		●
8	To bear all the expenses, other than those covered by the Grant, necessary for the implementation of the Project		●
9	To bear the following commissions paid to the Japanese bank for banking services based upon the B/A		
	1) Advising commission of A/P		●
	2) Payment commission		●

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

(3) Explanation of Draft Final Report

MINUTES OF DISCUSSIONS
PREPARATORY SURVEY ON THE PROJECT FOR UPGRADING THE HEALTH FACILITIES IN CENTRAL MYANMAR
IN
THE REPUBLIC OF THE UNION OF MYANMAR

Japan International Cooperation Agency (hereinafter referred to as "JICA") .dispatched a Preparatory Survey Team on the project for Upgrading the Health Facilities in Central Myanmar (hereinafter referred to as "the Project") to the Republic of the Union of Myanmar (hereinafter referred to as "Myanmar") from May 20 to June 15 2012, and through discussion, field survey, and technical examination of the survey results in Japan, JICA prepared a draft report of the survey.

In order to explain and to consult the officials concerned from Myanmar on the component of the draft report, JICA sent to the Union of Myanmar a Draft Report Explanation Team (hereinafter referred to as "the Team"), which is headed by Koichiro Koroki, Senior Assistant Director, Human Development Dept. JICA, from 11 November to 17 November 2012.

In the course of discussions, both parties confirmed the main items described in the attached sheets. The Team will proceed to further works and prepare the Preparatory Survey Report.

Nay Pyi Taw, 14 November 2012

Koichiro Koroki
Team leader
Preparatory Survey Team
Japan International Cooperation Agency
Japan

Dr.Min Than Nyunt
Director General
Department of Health
Ministry of Health
The Republic of the Union of Myanmar

ATTACHMENT

1. Components of the Draft Report

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

2. Japan's Grant Aid Scheme

The Myanmar side understands the Japan's Grant Aid Scheme and the necessary measures to be taken by the Government of Myanmar (hereinafter referred to as "GOM") as explained by the Team and described in Annex-4, Annex-5 of the Minutes of Discussions signed by both parties on 13th June, 2012.

3. Schedule of the Study

JICA will complete the final report in accordance with the confirmed item and send it to the Government of Myanmar by January 2013.

4. Confidentiality of the Project Design

Both sides confirmed that all information related to the Project design including detailed specifications of equipment and other technical information shall not be released to any outside parties before the signing of all the Contract(s) for the Project.

5. Other Relevant Issues

5-1 Confidentiality of the Project Cost Estimation

The Team explained the cost estimation of the Project as described in Annex-1. Both sides agreed that the Project Cost Estimation SHALL NOT be duplicated or released to any outside parties before the signing of all the Contract(s) for the Project. Both sides understand that the Project Cost Estimation described in Annex-1 is not final and is subject to change.

5-2 Myanmar side promised to exert effort to secure enough number of health staff designated to each health facilities by the completion of construction ~~or rehabilitation~~.

5-3. The Team explained the result of water quality survey which showed two constituent (arsenic and lead) exceeds the maximum permissible limit in some of the Rural Health Center. Both sides discussed and understood that the contaminated water by arsenic or lead should not be used for drinking water by any means. In response to these matters, the Team agreed that the faucet shall not be installed on the corresponded RHCs unless the contaminations specified on the above sentence are improved by MOH.

END

Annex-1 Project Cost Estimation

(1) Project Cost borne by the Japanese Side

The project cost borne by Japan is shown in the table bellow. These figures do not represent the donation limits.

Cost of the Japanese Scope of Works About 1,248 millions of yen

Cost Item	Estimated Project Cost (million yen)
Construction	812*
Equipment	281*
Planning, supervision	155*
Total	1,248

*Tentative Figure

(2) Project Cost borne by the Myanmar Side

About 7,851 US$ (622 thousands yen)

Cost Item	Estimated Project Cost (thousands yen)
Demolition and clearing the project site	4,551 (366)
Commissions of A/P and B/A	3,300 (266)
Total	7,851 (622)

(3) Calculation Conditions

1) Current as of October, 2012
2) Exchange rate 1 US$= 80.52 yen
3) Period Design and procurement period details are as noted in workflow process materials
4) Other The project will be carried out in compliance with the Japanese government's Grant Aid system.

5. Equipment List

Equipment procurement plan

For Preparatory Survey for the Project for Upgrading the Health Facilities in Central Myanmar

	積算リスト番号	Town Ship	Pakokku									Seik phyu						Pauk								
		Facility Code Number	1	109	110	111	112	114	115	116	112(3	2	144	145	146	147	144(3	3	136	137	138	139	140	141	142	143
		Facility Name / Equipment	Pakokku	Kan Ma	Myit Chay	Kaing	Lay Taing	Seik Kha Wa	Ywa Thit Kone	Hta Naung Kone	Taugpalu	Seik phyu	Kan Zun Ma	Auk Seik	Lat Sail	Inn Gan	Kyaung Yuan	Pauk	Ze Bya	Kaing Be	Kyauk Taing Hin	Ye Bya	Nant Thar	Tan Zu	Chaung Gu	Htun Taw
Department /Section		Facility Type	GeH	STH	STH	STH	RHC	RHC	RHC	RHC	RHC	TSH	STH	RHC	RHC	RHC	RHC	TSH	STH	RHC	RHC	RHC	RHC	RHC	RHC	RHC
Township/Station Hospital																										
Obstetrics Section	1	Operating Lamp, Mobile	1	1	1	1						1	1					1	1							
	2	Infant incubator (open type warmer)	1	1	1	1						1	1					1	1							
	3	Autoclave electorical type	1									1						1								
	4	Suction Unit (electric)	1	1	1	1						1	1					1	1							
	5	Caesarean operation Instrument Set	1	1	1	1						1	1					1	1							
	26	Delivery Table	1	1	1	1						1	1					1	1							
	28	Normal Delivery Instrument Set	1	1	1	1						1	1					1	1							
	31	Labor and Recovery bed	1	1	1	1						1	1					1	1							
	37	Operating Table	1	1	1	1						1	1					1	1							
	38	Phototherapy Unit, Single Beam	1	1	1	1						1	1					1	1							
	39	Autoclave Charcoal		1	1	1							1						1							
	40	Low Pressure continuou suction unit (electric)	1									1						1								
	41	Vaccum Extractor suction electric	1									1						1								
	42	Vaccum Extractor suction manual	1	1	1	1						1	1					1	1							
	43	Oxgen Generator	1	1	1	1						1	1					1	1							
RHC (Rural Health Center)																										
Outpaitent Examination	6	Medical Staff desk & chair					1		1		1			1	1	1	1				1	1	1		1	
Room	7	Patient Stool					1		1		1			1	1	1	1				1	1	1		1	
	8	Examination Table					1		1		1			1	1	1	1				1	1	1		1	
	9	Examination Lamp					1		1		1			1	1	1	1				1	1	1		1	
	10	Sphygmomanometer					1		1		1			1	1	1	1				1	1	1		1	
	11	Stethoscope					1		1		1			1	1	1	1				1	1	1		1	
	12	Diagnostic Set					1		1		1			1	1	1	1				1	1	1		1	
	13	Treatment Instrument Set					1		1		1			1	1	1	1				1	1	1		1	
	14	Treatment Trolley					1		1		1			1	1	1	1				1	1	1		1	
	15	height Scale					1		1		1			1	1	1	1				1	1	1		1	
	16	Weighing Scale					1		1		1			1	1	1	1				1	1	1		1	
	17	Instrument Cabinet					1	1	1	1	1			1	1	1	1			1	1	1	1	1	1	1
	18	Medicine Cabinet					1	1	1	1	1			1	1	1	1			1	1	1	1	1	1	1
	19	Ward Screen					1	1	1	1	1			1	1	1	1			1	1	1	1	1	1	1
	20	Clothes basket					1		1		1			1	1	1	1				1	1	1		1	
	21	Boiling Sterilizer、charcoal heating					1	1	1	1	1			1	1	1	1			1	1	1	1	1	1	1
MW.Obs. Consultants	6	Desk & chair for MW					1		1		1			1	1	1	1				1	1	1		1	
	8	Examination Table					1	1	1	1	1			1	1	1	1			1	1	1	1	1	1	1
	10	Sphygmomanometer					1	1	1	1	1			1	1	1	1			1	1	1	1	1	1	1
	11	Stethoscope					1	1	1	1	1			1	1	1	1			1	1	1	1	1	1	1
	14	Treatment Trolley					1		1		1			1	1	1	1				1	1	1		1	
	22	Fetus Stethoscope					1	1	1	1	1			1	1	1	1			1	1	1	1	1	1	1
	23	Obstetric Examination Set					1		1		1			1	1	1	1				1	1	1		1	
Midwife	24	Midwife Kit					1	1	1	1	1			1	1	1	1			1	1	1	1	1	1	1
First Stage Delivery	14	Treatment Trolley					1		1		1			1	1	1	1				1	1	1		1	
Room	18	Medicine Cabinet					1		1		1			1	1	1	1				1	1	1		1	
	25	Working Table					1		1		1			1	1	1	1				1	1	1		1	
	31	Labor and Recovery bed					1	1	1	1	1			1	1	1	1			1	1	1	1	1	1	1
Delivery Room	9	Examination Lamp					1		1		1			1	1	1	1				1	1	1		1	
	14	Treatment Trolley					1		1		1			1	1	1	1				1	1	1		1	
	25	Working Table					1		1		1			1	1	1	1				1	1	1		1	
	26	Delivery Table					1	1	1	1	1			1	1	1	1			1	1	1	1	1	1	1
	27	I.V. Stand					1	1	1	1	1			1	1	1	1			1	1	1	1	1	1	1
	28	Delivery instrument set					1	1	1	1	1			1	1	1	1			1	1	1	1	1	1	1
	29	Infant Treatment Table					1		1		1			1	1	1	1				1	1	1		1	
	30	Infant Weighing Scale					1	1	1	1	1			1	1	1	1			1	1	1	1	1	1	1
	44	Examination Lamp with solar battery						1		1										1				1		1
Post Delivery Room	31	Labor and Recovery bed					1		1		1			1	1	1	1				1	1	1		1	
	32	Bayby Cot					1	1	1	1	1			1	1	1	1			1	1	1	1	1	1	1
Lady Health Vistor	6	Desk & chair for LHV					1		1		1			1	1	1	1				1	1	1		1	
	33	Locker Cabinet					1		1		1			1	1	1	1				1	1	1		1	
	34	LHV/Midwife Kit					1	1	1	1	1			1	1	1	1			1	1	1	1	1	1	1
	33	Locker Cabinet					1		1		1			1	1	1	1				1	1	1		1	
Supervisor Room	35	Desk & chair for PHS					1		1		1			1	1	1	1				1	1	1		1	
	45	PHS Kit					1	1	1	1	1			1	1	1	1			1	1	1	1	1	1	1
Health Assistant	6	Desk & chair for HA					1		1		1			1	1	1	1				1	1	1		1	
Room	33	Locker Cabinet					1		1		1			1	1	1	1				1	1	1		1	
	36	Health Assistant Kit					1	1	1	1	1			1	1	1	1			1	1	1	1	1	1	1
Store	33	Locker Cabinet					1		1		1			1	1	1	1				1	1	1		1	
SHC (Sub-Rural Health Center)																										
Midwife	24	Midwife Kit	32									18						35								

Equipment procurement plan

For Preparatory Survey for the Project for Upgrading the Health Facilities in Central Myanmar

	積算リスト番号	Town Ship	Myaing							Natmaut							Salin										
		Facility Code Number	4	128	131	132	133	134	135	9	26	30	32	29	27	31	28	5	53	54	55	56	57	58	59	54(3)	58(1)	60(1)
		Facility Name / Equipment	Myaing	Let Yat Ma	Kan Net	Lim ka Taw	Ma Gyi Kan	Kaing Taw Ma	Kyauk Sauk	Natmaut	Shwepntaw	Tatnaewun	Hpankharsangyi	Inngan	Tharhmyar	Thahmonekonegyi	Saingkaung	Salin	Sin Phyu Gyun	Lin Zin	Ta Nyaung	Phaung Lin	Tha Yet Taw	Oak Shit Kone	Nga Than Gaung	Kan Pyar	Sin Ma Kty	Thanatkone
Department /Section		Facility Type	TSH	STH	RHC	RHC	RHC	RHC	RHC	TSH	SHC	RHC	RHC	RHC	RHC	RHC	RHC	TSH	STH	STH	STH	RHC	RHC	RHC	RHC	RHC	RHC	RHC
Township/Station Hospital																												
Obstetrics Section	1	Operating Lamp, Mobile	1	1						1	1							1	1	1	1							
	2	Infant incubator (open type warmer)	1	1						1	1							1	1	1	1							
	3	Autoclave electorical type	1							1								1										
	4	Suction Unit (electric)	1	1						1	1							1	1	1	1							
	5	Caesarean operation Instrument Set	1	1						1	1							1	1	1	1							
	26	Delivery Table	1	1						1	1							1	1	1	1							
	28	Normal Delivery Instrument Set	1	1						1	1							1	1	1	1							
	31	Labor and Recovery bed	1	1						1	1							1	1	1	1							
	37	Operating Table	1	1						1	1							1	1	1	1							
	38	Phototherapy Unit, Single Beam	1	1						1	1							1	1	1	1							
	39	Autoclave Charcoal		1							1								1	1	1							
	40	Low Pressure continuou suction unit (electric)	1							1								1										
	41	Vaccum Extractor suction electric	1							1								1										
	42	Vaccum Extractor suction manual	1	1						1	1							1	1	1	1							
	43	Oxgen Generator	1	1						1	1							1	1	1	1							
RHC (Rural Health Center)																												
Outpaitent Examination	6	Medical Staff desk & chair			1	1	1		1			1			1	1	1					1			1	1	1	1
Room	7	Patient Stool			1	1	1		1			1			1	1	1					1			1	1	1	1
	8	Examination Table			1	1	1		1			1			1	1	1					1			1	1	1	1
	9	Examination Lamp			1	1	1		1			1			1	1	1					1			1	1	1	1
	10	Sphygmomanometer			1	1	1		1			1			1	1	1					1			1	1	1	1
	11	Stethoscope			1	1	1		1			1			1	1	1					1			1	1	1	1
	12	Diagnostic Set			1	1	1		1			1			1	1	1					1			1	1	1	1
	13	Treatment Instrument Set			1	1	1		1			1			1	1	1					1			1	1	1	1
	14	Treatment Trolley			1	1	1		1			1			1	1	1					1			1	1	1	1
	15	height Scale			1	1	1		1			1			1	1	1					1			1	1	1	1
	16	Weighing Scale			1	1	1		1			1			1	1	1					1			1	1	1	1
	17	Instrument Cabinet			1	1	1	1	1			1	1	1	1	1	1					1	1	1	1	1	1	1
	18	Medicine Cabinet			1	1	1	1	1			1	1	1	1	1	1					1	1	1	1	1	1	1
	19	Ward Screen			1	1	1	1	1			1	1	1	1	1	1					1	1	1	1	1	1	1
	20	Clothes basket			1	1	1		1			1			1	1	1					1			1	1	1	1
	21	Boiling Sterilizer、charcoal heating			1	1	1	1	1			1	1	1	1	1	1					1	1	1	1	1	1	1
MW.Obs. Consultants	6	Desk & chair for MW			1	1	1		1			1			1	1	1					1			1	1	1	1
	8	Examination Table			1	1	1	1	1			1	1	1	1	1	1					1	1	1	1	1	1	1
	10	Sphygmomanometer			1	1	1	1	1			1	1	1	1	1	1					1	1	1	1	1	1	1
	11	Stethoscope			1	1	1	1	1			1	1	1	1	1	1					1	1	1	1	1	1	1
	14	Treatment Trolley			1	1	1		1			1			1	1	1					1			1	1	1	1
	22	Fetus Stethoscope			1	1	1	1	1			1	1	1	1	1	1					1	1	1	1	1	1	1
	23	Obstetric Examination Set			1	1	1		1			1			1	1	1					1			1	1	1	1
Midwife	24	Midwife Kit			1	1	1	1	1			1	1	1	1	1	1					1	1	1	1	1	1	1
First Stage Delivery	14	Treatment Trolley			1	1	1		1			1			1	1	1					1			1	1	1	1
Room	18	Medicine Cabinet			1	1	1		1			1			1	1	1					1			1	1	1	1
	25	Working Table			1	1	1		1			1			1	1	1					1			1	1	1	1
	31	Labor and Recovery bed			1	1	1	1	1			1	1	1	1	1	1					1	1	1	1	1	1	1
Delivery Room	9	Examination Lamp			1	1	1		1			1			1	1	1					1			1	1	1	1
	14	Treatment Trolley			1	1	1		1			1			1	1	1					1			1	1	1	1
	25	Working Table			1	1	1		1			1			1	1	1					1			1	1	1	1
	26	Delivery Table			1	1	1	1	1			1	1	1	1	1	1					1	1	1	1	1	1	1
	27	I.V. Stand			1	1	1	1	1			1	1	1	1	1	1					1	1	1	1	1	1	1
	28	Delivery instrument set			1	1	1	1	1			1	1	1	1	1	1					1	1	1	1	1	1	1
	29	Infant Treatment Table			1	1	1		1			1			1	1	1					1			1	1	1	1
	30	Infant Weighing Scale			1	1	1	1	1			1	1	1	1	1	1					1	1	1	1	1	1	1
	44	Examination Lamp with solar battery						1					1	1									1	1				
Post Delivery Room	31	Labor and Recovery bed			1	1	1		1			1			1	1	1					1			1	1	1	1
	32	Bayby Cot			1	1	1	1	1			1	1	1	1	1	1					1	1	1	1	1	1	1
Lady Health Vistor	6	Desk & chair for LHV			1	1	1		1			1			1	1	1					1			1	1	1	1
	33	Locker Cabinet			1	1	1		1			1			1	1	1					1			1	1	1	1
	34	LHV/Midwife Kit			1	1	1	1	1			1	1	1	1	1	1					1	1	1	1	1	1	1
	33	Locker Cabinet			1	1	1		1			1			1	1	1					1			1	1	1	1
Supervisor Room	35	Desk & chair for PHS			1	1	1		1			1			1	1	1					1			1	1	1	1
	45	PHS Kit			1	1	1	1	1			1	1	1	1	1	1					1	1	1	1	1	1	1
Health Assistant	6	Desk & chair for HA			1	1	1		1			1			1	1	1					1			1	1	1	1
Room	33	Locker Cabinet			1	1	1		1			1			1	1	1					1			1	1	1	1
	36	Health Assistant Kit			1	1	1	1	1			1	1	1	1	1	1					1	1	1	1	1	1	1
Store	33	Locker Cabinet			1	1	1		1			1			1	1	1					1			1	1	1	1
SHC (Sub-Rural Health Center)																												
Midwife	24	Midwife Kit	35							31								33										

Equipment procurement plan

For Preparatory Survey for the Project for Upgrading the Health Facilities in Central Myanmar

	積算リスト番号	Town Ship	Say Toke Ta Yar					Saw							Ya Sa Gyo											Total Quant.
		Facility Code Number	7	72	73	74	75	6	161	163	164	165	166	167	8	118	119	120	121	122	123	124	125	126	127	
		Facility Name / Equipment	Say Toke Ta Yar	Kyee Wa	Pha Aing	Khwe Ma Laung	Ohn Wa	Saw	Kyauk Htu	Mi Ai	Nyaung Bin	Neg Pya Kyin	Ka Chaung	Ta Byin	Ya Sa Gyo	Mye Taw	Ma Oo	Pa Khan Gyi	Kyat Su Kyin	Sin Ma Ye	Kokko Su	Kyu Ywa	Khwe Hanyoke	Sin Te	Thit Gyi Taw	
Department /Section		Facility Type	TSH	RHC	RHC	RHC	RHC	TSH	STH	RHC	RHC	RHC	RHC	RHC	TSH	STH	STH	STH	STH	RHC	RHC	RHC	RHC	RHC	RHC	
Township/Station Hospital																										
Obstetrics Section	1	Operating Lamp, Mobile	1					1	1						1	1	1	1	1							24
	2	Infant incubator (open type warmer)	1					1	1						1	1	1	1	1							24
	3	Autoclave electorical type	1					1							1											9
	4	Suction Unit (electric)	1					1	1						1	1	1	1	1							24
	5	Caesarean operation Instrument Set	1					1	1						1	1	1	1	1							24
	26	Delivery Table	1					1	1						1	1	1	1	1							24
	28	Normal Delivery Instrument Set	1					1	1						1	1	1	1	1							24
	31	Labor and Recovery bed	1					1	1						1	1	1	1	1							24
	37	Operating Table	1					1	1						1	1	1	1	1							24
	38	Phototherapy Unit, Single Beam	1					1	1						1	1	1	1	1							24
	39	Autoclave Charcoal							1							1	1	1	1							15
	40	Low Pressure continuou suction unit (electric)	1					1							1											9
	41	Vaccum Extractor suction electric	1					1							1											9
	42	Vaccum Extractor suction manual	1					1	1						1	1	1	1	1							24
	43	Oxgen Generator	1					1	1						1	1	1	1	1							24
RHC (Rural Health Center)																										
Outpaitent Examination	6	Medical Staff desk & chair		1	1					1			1	1						1	1		1		1	33
Room	7	Patient Stool		1	1					1			1	1						1	1		1		1	33
	8	Examination Table		1	1					1			1	1						1	1		1		1	33
	9	Examination Lamp		1	1					1			1	1						1	1		1		1	33
	10	Sphygmomanometer		1	1					1			1	1						1	1		1		1	33
	11	Stethoscope		1	1					1			1	1						1	1		1		1	33
	12	Diagnostic Set		1	1					1			1	1						1	1		1		1	33
	13	Treatment Instrument Set		1	1					1			1	1						1	1		1		1	33
	14	Treatment Trolley		1	1					1			1	1						1	1		1		1	33
	15	height Scale		1	1					1			1	1						1	1		1		1	33
	16	Weighing Scale		1	1					1			1	1						1	1		1		1	33
	17	Instrument Cabinet		1	1	1	1			1	1	1	1	1						1	1	1	1	1	1	49
	18	Medicine Cabinet		1	1	1	1			1	1	1	1	1						1	1	1	1	1	1	49
	19	Ward Screen		1	1	1	1			1	1	1	1	1						1	1	1	1	1	1	49
	20	Clothes basket		1	1					1			1	1						1	1		1		1	33
	21	Boiling Sterilizer、charcoal heating		1	1	1	1			1	1	1	1	1						1	1	1	1	1	1	49
MW.Obs. Consultants	6	Desk & chair for MW		1	1					1			1	1						1	1		1		1	33
	8	Examination Table		1	1	1	1			1	1	1	1	1						1	1	1	1	1	1	49
	10	Sphygmomanometer		1	1	1	1			1	1	1	1	1						1	1	1	1	1	1	49
	11	Stethoscope		1	1	1	1			1	1	1	1	1						1	1	1	1	1	1	49
	14	Treatment Trolley		1	1					1			1	1						1	1		1		1	33
	22	Fetus Stethoscope		1	1	1	1			1	1	1	1	1						1	1	1	1	1	1	49
	23	Obstetric Examination Set		1	1					1			1	1						1	1		1		1	33
Midwife	24	Midwife Kit		1	1	1	1			1	1	1	1	1						1	1	1	1	1	1	49
First Stage Delivery	14	Treatment Trolley		1	1					1			1	1						1	1		1		1	33
Room	18	Medicine Cabinet		1	1					1			1	1						1	1		1		1	33
	25	Working Table		1	1					1			1	1						1	1		1		1	33
	31	Labor and Recovery bed		1	1	1	1			1	1	1	1	1						1	1	1	1	1	1	49
Delivery Room	9	Examination Lamp		1	1					1			1	1						1	1		1		1	33
	14	Treatment Trolley		1	1					1			1	1						1	1		1		1	33
	25	Working Table		1	1					1			1	1						1	1		1		1	33
	26	Delivery Table		1	1	1	1			1	1	1	1	1						1	1	1	1	1	1	49
	27	I.V. Stand		1	1	1	1			1	1	1	1	1						1	1	1	1	1	1	49
	28	Delivery instrument set		1	1	1	1			1	1	1	1	1						1	1	1	1	1	1	49
	29	Infant Treatment Table		1	1					1			1	1						1	1		1		1	33
	30	Infant Weighing Scale		1	1	1	1			1	1	1	1	1						1	1	1	1	1	1	49
	44	Examination Lamp with solar battery				1	1				1	1										1		1		16
Post Delivery Room	31	Labor and Recovery bed		1	1					1			1	1						1	1		1		1	33
	32	Bayby Cot		1	1	1	1			1	1	1	1	1						1	1	1	1	1	1	49
Lady Health Vistor	6	Desk & chair for LHV		1	1					1			1	1						1	1		1		1	33
	33	Locker Cabinet		1	1					1			1	1						1	1		1		1	33
	34	LHV/Midwife Kit		1	1	1	1			1	1	1	1	1						1	1	1	1	1	1	49
	33	Locker Cabinet		1	1					1			1	1						1	1		1		1	33
Supervisor Room	35	Desk & chair for PHS		1	1					1			1	1						1	1		1		1	33
	45	PHS Kit		1	1	1	1			1	1	1	1	1						1	1	1	1	1	1	49
Health Assistant	6	Desk & chair for HA		1	1					1			1	1						1	1		1		1	33
Room	33	Locker Cabinet		1	1					1			1	1						1	1		1		1	33
	36	Health Assistant Kit		1	1	1	1			1	1	1	1	1						1	1	1	1	1	1	49
Store	33	Locker Cabinet		1	1					1			1	1						1	1		1		1	33
SHC (Sub-Rural Health Center)																										
Midwife	24	Midwife Kit	23					31							43											281

6. Water quality survey result

Table. Arsenic and Lead contents of water samples from townships in Magway Region

Sr. No.	Sample Location						Sample Source	Arsenic Content As (Mg/L)	Lead Content Pb (Mg/L)
	ID by Nippon Koei	Area	ID by REM	Hospital/Village	Township	GPS Loc.			
1.		A	PK-01	Near General Hospital	Pakokku	95° 00' 00'' E 00° 05' 18.4'' N Elev. 106 m	Tube well (by pump)	ND	0.0084
2.	109	A	PK-02	Kan Ma (St. Hospital)	Pakokku	94° 49' 33.7'' E 21° 23' 13.5'' N Elev. 192 m	Tube well(by pump)	ND	0.0070
3.	110	A	PK-03	Myit Chay (St. Hospital)	Pakokku	94° 51' 09.4'' E 21° 14' 55.5'' N Elev. 95 m	Tube well (by pump)	ND	0.0154*
4.	111	A	PK-04	Kaing Ywa (RHC)	Pakokku	95° 02' 28.0'' E 21° 27' 06.3'' N Elev. 141 m	Tube well (by pump)	0.005	0.0098
5.	112	A	PK-05	Lay Taing (RHC)	Pakokku	94° 40' 42.3'' E 21° 15' 38.6'' N Elev. 141 m	Tube well (by hand)	ND	0.0119*
6.	114	A	PK-06	Seik Kha Wa (RHC)	Pakokku	94° 47' 59.6'' E 21° 07' 50.3'' N Elev. 73 m	River	ND	0.0157*
7.	115	A	PK-07	Ywa Thit Kone (RHC)	Pakokku	95° 02' 28.2'' E 21° 19' 01.3'' N Elev. 96 m	Tube well (by hand)	0.007	0.0109*
8.	116	A	PK-08	Hta Naung Gone (RHC)	Pakokku	94° 59' 04.0'' E 21° 16' 57.9'' N Elev. 79 m	Tube well (by hand)	0.020*	0.0077
9.	112 (3)	A	PK-09	Taungpalu (RHC)	Pakokku	94° 43' 25.8'' E 21° 07' 36.7'' N Elev. 103 m	Tube well (by hand)	0.060*	0.0069
10.		A	SP-01	Township Hospital	Seik Phyu	94° 47' 47.4'' E 20° 54' 39.1'' N Elev. 109 m	Tube well (by pump)	ND	0.0164*

11.	144	A	SP-02	Ka Zun Ma (St. Hospital)	Seik Phyu	94° 24' 26.2'' E 21° 00' 14.0'' N Elev. 293m	Tube well (by hand)	ND	0.0165*
12.	145	A	SP-03	Auk Seik (RHC)	Seik Phyu	94° 43' 40.3'' E 20° 51' 47.7'' N Elev. 140 m	Tube well (by hand)	ND	0.0105*
13.	146	A	SP-04	Let Sail (RHC)	Seik Phyu	94° 40' 46.9'' E 21° 03' 59.4'' N Elev. 158 m	Tube well (by hand)	ND	0.0182*
14.	147	A	SP-05	Inn Gan (RHC)	Seik Phyu	94° 40' 41.6'' E 21° 12' 45.4'' N Elev. 135m	Tube well (by pump)	ND	0.0166*
15.	144 (3)	A	SP-06	Kyaung Ywa (RHC)	Seik Phyu	94° 30' 54.4'' E 21° 01' 53.3'' N Elev. 299 m	Tube well (by pump)	ND	0.0166*
16.		A	PA-01	Township Hospital	Pauk	94° 28' 41.4'' E 21° 26' 56.1'' N Elev. 177 m	Tube well (by pump)	ND	0.0176*
17.	136	A	PA-02	Ze Bya (St. Hospital)	Pauk	94° 27' 22.5'' E 21° 37' 28.99'' N Elev. 264 m	Tube well (by pump)	0.006	0.0118*
18.	137	A	PA-03	Kaing Be (RHC)	Pauk	94° 26' 43'' E 21° 20' 57.7'' N Elev. 215 m	Tube well (by pump)	ND	0.0102*
19.	138	A	PA-04	Kyauk Taing Hin (RHC)	Pauk	94° 36' 30.9'' E 21° 36' 30.9'' N Elev. 312 m	Pond	ND	0.0112*.
20.	139	A	PA-05	Ye Bya (RHC)	Pauk	94° 37' 18'' E 21° 25' 44.4'' N Elev. 127 m	Tube well (by pump)	ND	0.0084
21.	140	A	PA-06	Nant Thar (RHC)	Pauk	94° 38' 37.7'' E 21° 19' 46.2'' N Elev. 140 m	Tube well (by pump)	ND	0.0045
22.	141	A	PA-07	Tan Zu (RHC)	Pauk	94° 19' 31.3'' E 21° 17' 42.3'' N Elev. 205 m	Stream	ND	0.0034

23.	142	A	PA-08	Chaung Gu (RHC)	Pauk	94° 25' 29.6'' E 21° 32' 8.27'' N Elev. 247 m	Tube well (by hand)	ND	0.0093
24.	143	A	PA-09	Htun Taw (RHC)	Pauk	94° 24' 18.53'' E 21° 47' 4.16'' N Elev. 342 m	Spring	ND	0.0130*
25.		A	MY-01	Township Hispital	Myaing	94° 51' 51.5'' E 21° 36' 53'' N Elev. 255m	Tube well (by pump)	ND	0.0165*
26.	128	A	MY-02	Let Yet Ma (St. Hospital)	Myaing	94° 56' 05.2'' E 21° 45' 25.6'' N Elev. 191 m	Tube well (by pump)	ND	0.0116*
27.	131	A	MY-03	Kan Net (RHC)	Myaing	94° 54' 47.5'' E 21° 40' 48.1'' N Elev. 232 m	Tube well (by pump)	ND	0.0098
28.	132	A	MY-04	Lin Ka Taw (RHC)	Myaing	95° 01' 57.8'' E 21° 45' 02.5'' N Elev. 139 m	Tube well (by hand)	ND	0.0123*
29.	133	A	MY-05	Ma Gyi Kan (RHC)	Myaing	94° 40' 44'' E 21° 42' 51.5'' N Elev. 295 m	Reservoir	ND	0.0098
30.	134	A	MY-06	Kyein Taw Ma (RHC)	Myaing	94° 45' 47.5'' E 21° 31' 06.2'' N Elev. 253 m	Tube well (by pump)	ND	0.0123*
31.	135	A	MY-07	Kyauk Sauk (RHC)	Myaing	94° 57' 15.5'' E 21° 32' 15.5'' N Elev. 187 m	Tube well (by hand)	ND	0.0069
32.		B	YG-01	Township Hospital	Ye Sa Gyo	95° 14' 41.8'' E 21° 37' 34.7'' N Elev. m	Tube well (by pump)	ND	0.0167*
33.	118	B	YG-02	Mye Taw (St. Hospital)	Ye Sa Gyo	95° 04' 41.4'' E 27° 42' 46'' N Elev. 000 m	Tube well (by hand)	ND	0.0142*
34.	119	B	YG-03	Ma Au (St. Hospital)	Ye Sa Gyo	95° 11' 42.5'' E 21° 44' 37.1'' N Elev. 90m	Stream	ND	0.0110*

35.	120	B	YG-04	Pa Khan Gyi (St. Hospital)	Ye Sa Gyo	95° 12' 14'' E 21° 32' 33.5'' N Elev. 117 m	Tube well (by pump)	ND	0.0147*
36.	121	B	YG-05	Kyat Su Kyin (St. Hospital)	Ye Sa Gyo	95° 00' 36.9'' E 21° 41' 29.7'' N Elev. 000 m	Tube well(by hand)	ND	0.0140*
37.	122	B	YG-06	Sin Ma Ye (RHC)	Ye Sa Gyo	95° 14' 50'' E 21° 26' 58.3'' N Elev. 54 m	Tube well(by hand)	ND	0.0155*
38.	123	B	YG-07	Kokko Su (RHC)	Ye Sa Gyo	95° 04' 41.4'' E 21° 42' 4'' N Elev. 000 m	Tube well(by hand)	ND	0.0145*
39.	124	B	YG-08	Kyu Ywa (RHC)	Ye Sa Gyo	95° 11' 46.1'' E 21° 25' 55.1'' N Elev. 60 m	Well	0.006	0.0123*
40.	125	B	YG-09	Khwe Hanyoke (RHC)	Ye Sa Gyo	95° 09' 09'' E 21°36 ' 06.5'' N Elev. 155 m	Tube well(by hand)	0.001	0.0151*
41.	126	B	YG-10	Sin Te (RHC)	Ye Sa Gyo	95° 18' 02.3'' E 21° 30' 07.9'' N Elev. 11 m	Tube well(by hand)	ND	0.0163*
42.	127	B	YG-11	Thit Gyi Taw(SHC)	Ye Sa Gyo	95° 07' 44.9'' E 21° 48' 06.8'' N Elev. 97 m	Tube well(by hand)	ND	0.0132*
43.		B	SL-01	Township Hospital	Sa Lin	94° 39' 33.6'' E 20° 34' 27.6'' N Elev. 109 m	Tube well (by pump)	ND	0.0152*
44.	53	B	SL-02	Sin Phyu Gyun (St. Hospital)	Sa Lin	94° 41' 42.8'' E 20° 40' 04.3'' N Elev. 106 m	Tube well (by pump)	ND	0.0134*
45.	54	B	SL-03	Lin Zin (St. Hospital)	Sa Lin	94° 30' 43.7'' E 20° 35' 51.6'' N Elev. 117 m	Tube well (by hand)	ND	0.0086
46.	55	B	SL-04	Ta Nyaung (St. Hospital)	Sa Lin	94° 40' 01.9'' E 20° 50' 23.8'' N Elev. 85 m	Tube well (by pump)	ND	0.0127*

47.	56	B	SL-05	Paung Lin (RHC)	Sa Lin	94° 44' 06.0'' E 20° 31' 16.4'' N Elev. 55 m	Tube well (by hand)	0.001	0.0083
48.	57	B	SL-06	Tha Yet Taw (RHC)	Sa Lin	94° 26' 20.5'' E 20° 46' 26.3'' N Elev. 133 m	Well	ND	0.0161*
49.	58	B	SL-07	Oak Shit Kone (RHC)	Sa Lin	94° 39' 26.6'' E 20° 45' 24.2'' N Elev. 103 m	Tube well (by pump)	ND	0.0035
50.	59	B	SL-08	Nga Than Gaung (RHC)	Sa Lin	94° 36' 29.3'' E 20° 36' 02.2'' N Elev. 97 m	Tube well (by hand)	ND	0.0098
51.	54 (3)	B	SL-09	Kan Pyar (RHC)	Sa Lin	94° 26' 42.2'' E 20° 31' 52.9'' N Elev. 133 m	Well	ND	0.0126*
52.	58 (1)	B	SL-10	Sin Ma Gyun (RHC)	Sa Lin	94° 42' 35.1'' E 20° 43' 37.1'' N Elev. 46 m	Tube well (by hand)	ND	0.0104*
53.	60 (1)	B	SL-11	Tha Nat Kone (RHC)	Sa Lin	94° 44' 39.2'' E 20° 36' 03.5'' N Elev. 53 m	Tube well (by hand)	0.012*	0.0114*
54.		C	SA-01	Township Hospital	Saw	94° 09' 25.9'' E 21° 09' 13.3'' N Elev. 000 m	Stream	ND	0.0136*
55.	161	C	SA-02	Kyauk Htu (St. Hospital)	Saw	94° 08' 13.5'' E 21° 24' 13.7'' N Elev. 385 m	Spring	ND	0.0102*
56.	163	C	SA-03	Mi Al (RHC)	Saw	94° 08' 12.6'' E 21° 28' 16.3'' N Elev. 343 m	Stream	ND	0.0117*
57.	164	C	SA-04	Nyaung Bin (RHC)	Saw	94° 15' 15.2'' E 20° 59' 46.4'' N Elev. 308 m	Tube well (by hand)	0.003	0.0129*
58.	165	C	SA-05	Neg Pya Kyin (RHC)	Saw	94° 11' 44.0'' E 20° 54' 59.3'' N Elev. 523 m	Tube well (by hand)	ND	0.158*

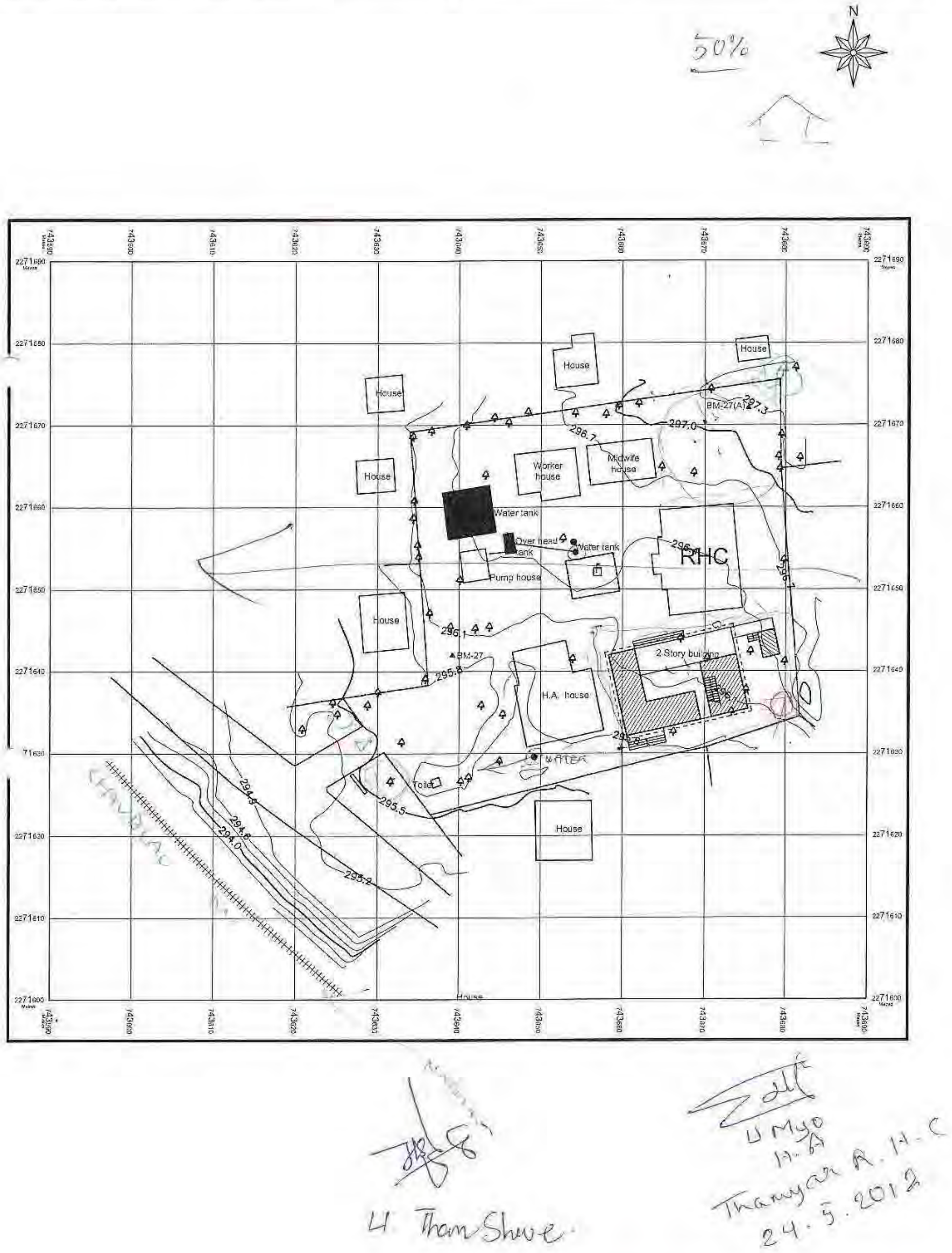
59.	166	C	SA-06	Ka Chaung (RHC)	Saw	94° 09' 10.9'' E 21° 16' 32.4'' N Elev. 350 m	Stream	ND	0.0158*
60.	167	C	SA-07	Ta Byin (RHC)	Saw	94° 15' 17.6'' E 21° 27' 24.9'' N Elev. 317 m	Tube well (by hand)	ND	0.0245*
61.		C	ST-01	Township Hispital	Say Toke Ta Yar	94° 14' 57.1'' E 20° 27' 03.5'' N Elev. 119 m	Tube well (by Pump)	ND	0.0143*
62.	72	C	ST-02	Kyee Wa (RHC)	Say Toke Ta Yar	94° 19' 00.5'' E 20° 21' 47.0'' N Elev. 99 m	Stream	ND	0.0161*
63.	73	C	ST-03	Pha Aing (RHC)	Say Toke Ta Yar	94° 19' 52.4'' E 20° 15' 04.5'' N Elev. 137 m	Stream	ND	0.0115*
64.	74	C	ST-04	Khwe Ma Laung (RHC)	Say Toke Ta Yar	94° 14' 40.6'' E 20° 38' 17.5'' N Elev. 177 m	Well	ND	0.0153*
65.	75	C	ST-05	Ohn Wa (RHC)	Say Toke Ta Yar	94° 12' 02.5'' E 20° 48' 32.7'' N Elev. 367 m	Well	ND	0.0089
66.		C	NM-01	Township Hospital	Nat Maut	95° 24' 01.0'' E 20° 21' 45.7'' N Elev. 220 m	Tube well (by pump)	ND	0.0141*
67.	26	C	NM-02	Shwe Pan Taw (RHC)	Nat Maut	95° 23' 55.4'' E 20° 37' 19.5'' N Elev. 269 m	Tube well (by hand)	ND	0.1430*
68.	27	C	NM-03	Thar Hmyar (RHC)	Nat Maut	95° 20' 11.7'' E 20° 31' 40.9'' N Elev. 291 m	Tube well (by pump)	ND	0.0048
69.	28	C	NM-04	Saing Kaung (RHC)	Nat Maut	95° 36' 29.5'' E 20° 30' 16.1'' N Elev. 313 m	Tube well (by pump)	ND	0.0091
70.	29	C	NM-05	Inn Gan (RHC)	Nat Maut	95° 16' 58.8'' E 20° 41' 03.6'' N Elev. 211 m	Tube well (by pump)	ND	0.0107*

71.	30	C	NM-06	Tat Wun (RHC)	Nat Maut	95° 12' 37.5'' E 20° 22' 51.5'' N Elev. 286 m	Well	ND	0.0099
72.	31	C	NM-07	Tha Mone Kone Gyi (RHC)	Nat Maut	95° 32' 08.8'' E 20° 22' 34.0'' N Elev. 231 m	Tube well (by hand)	ND	0.0126*
73.	32	C	NM-08	Hpan Khar San Gyi (RHC)	Nat Maut	95° 14' 16.7'' E 20° 35' 32.6'' N Elev. 308 m	Tube well (by pump)	ND	0.0163*

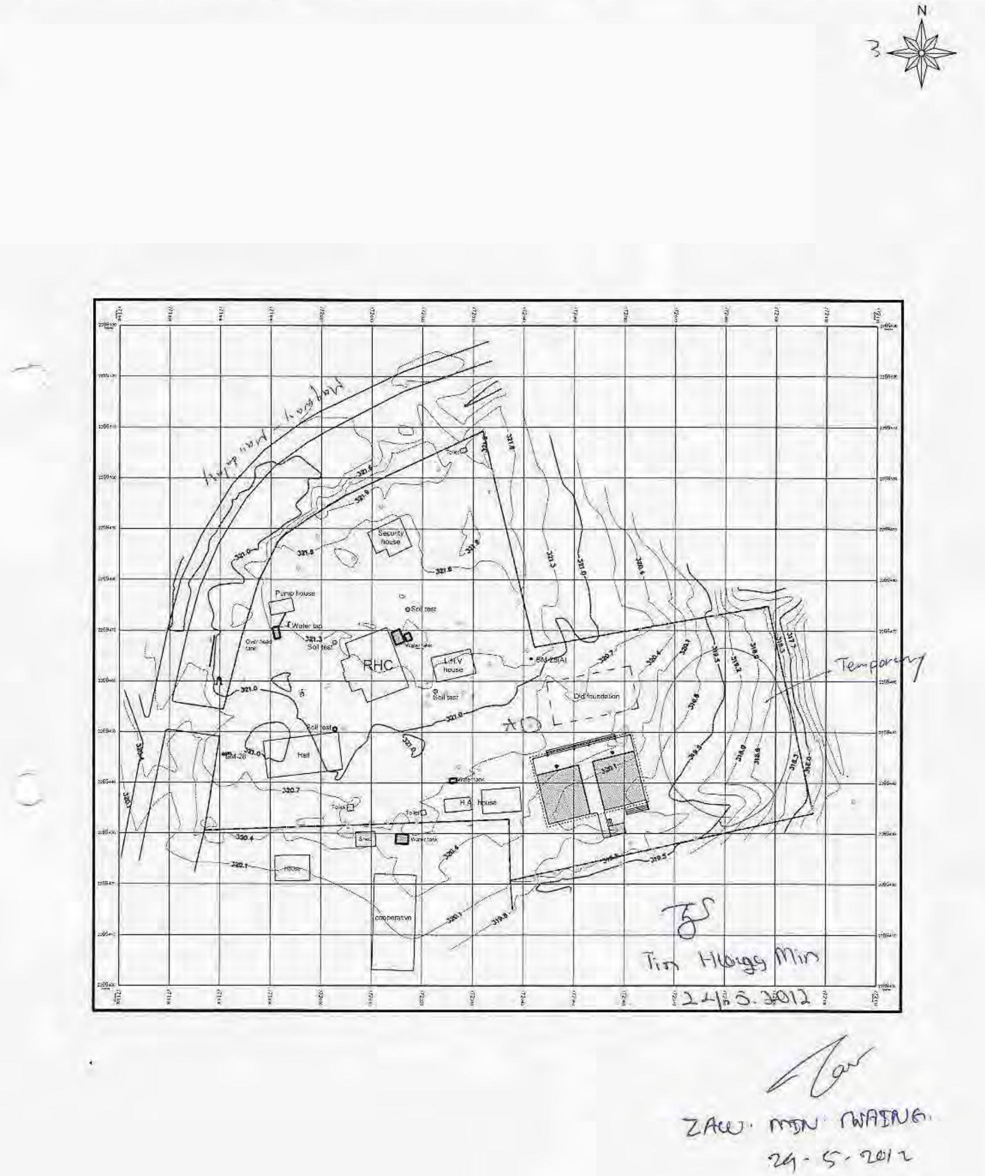
ND: None detected. 72 : Planned Construction RHCs --:Exceed WHO stsndard(0.01mg/L)

7. LOI from the Concerned Authorities

27	NATMAUT TS Thar Myar RHC		Scale : 1/600

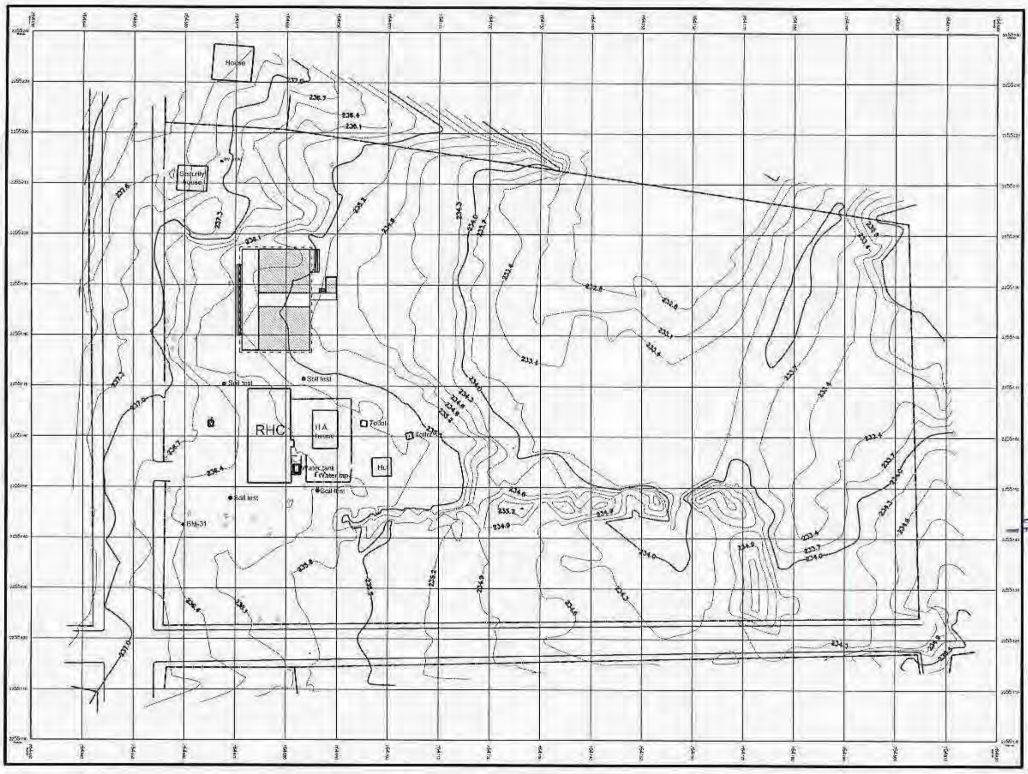


28	NATMAUT TS Saing Guang RHC	Option 1	Scale : 1/1000



HAおよびコミュニティに同意された施設配置案

31	NATMAUT TS Tha Hmon Gon Gyi RHC		Scale : 1/1000

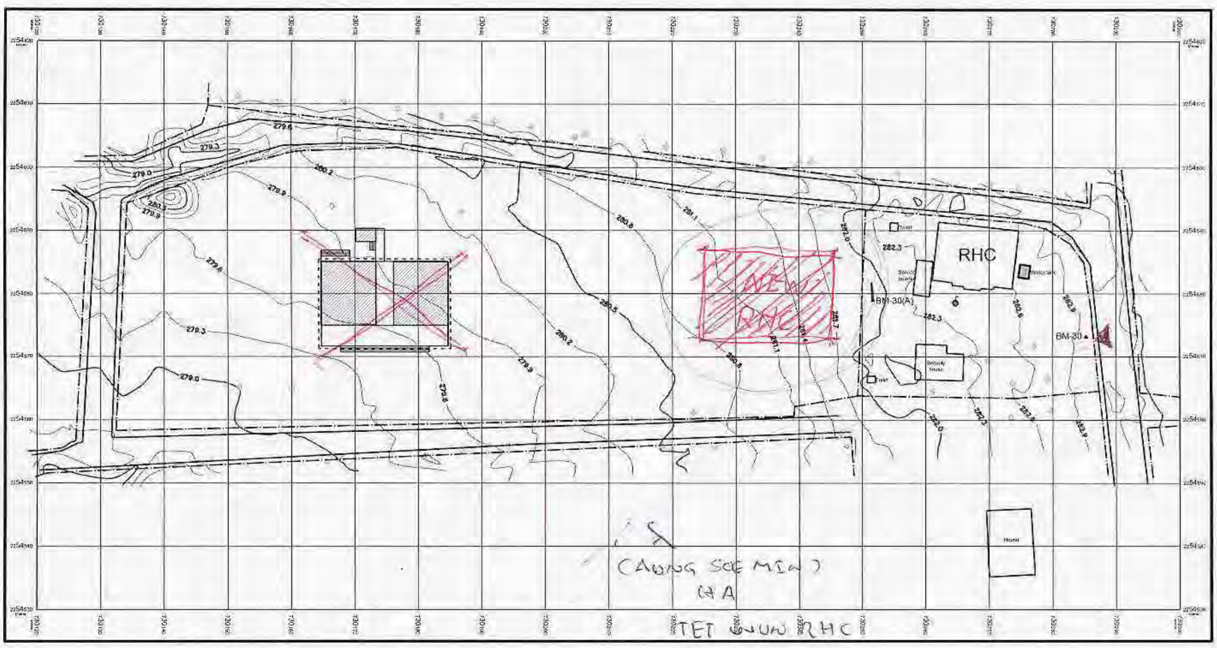


24. MAY. 2012.

DAW MYA THIN KYI

U Nyi Lhwe

30	NATMAUT TS Tet Wun RHC		Scale : 1/800

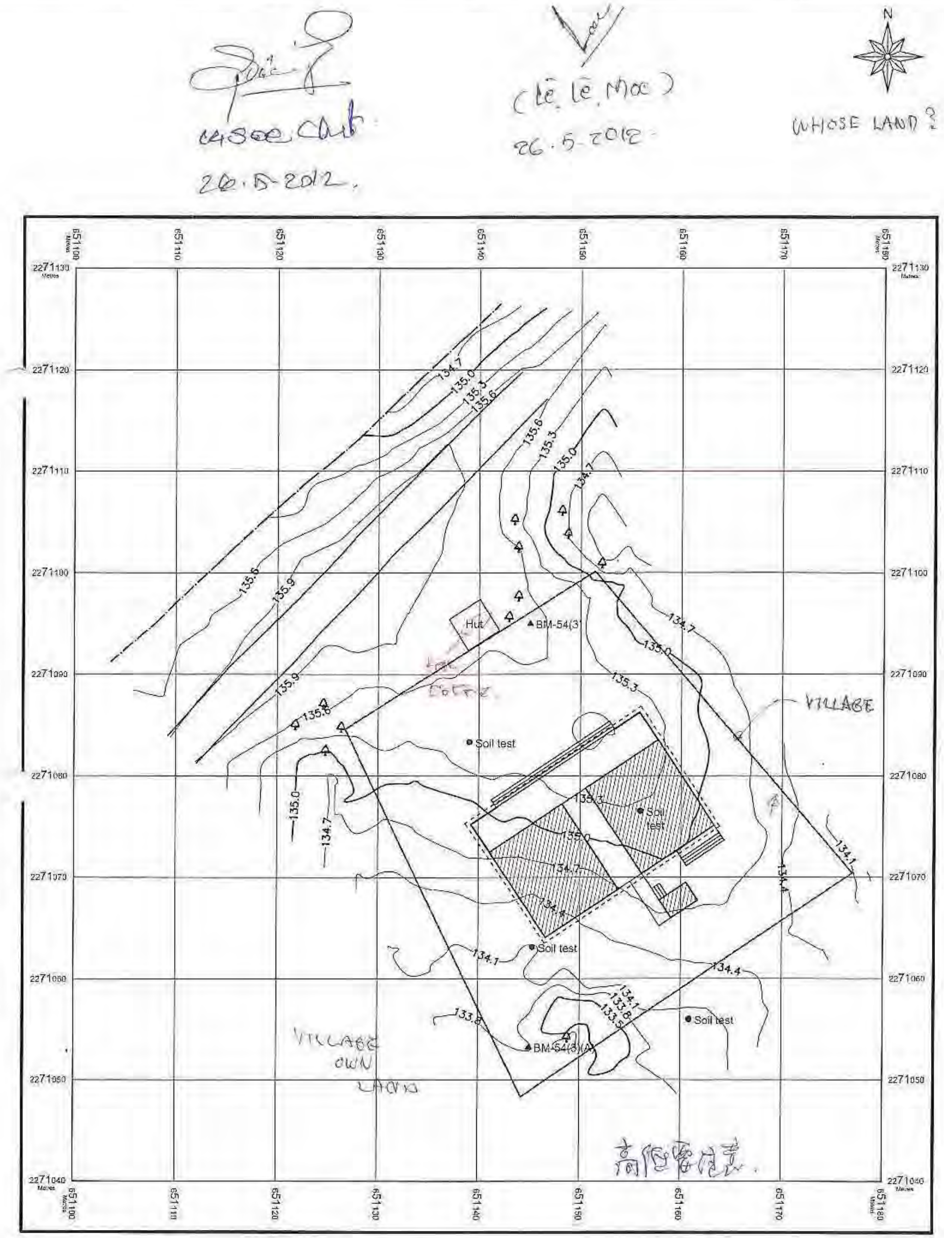


TET WUN RHC

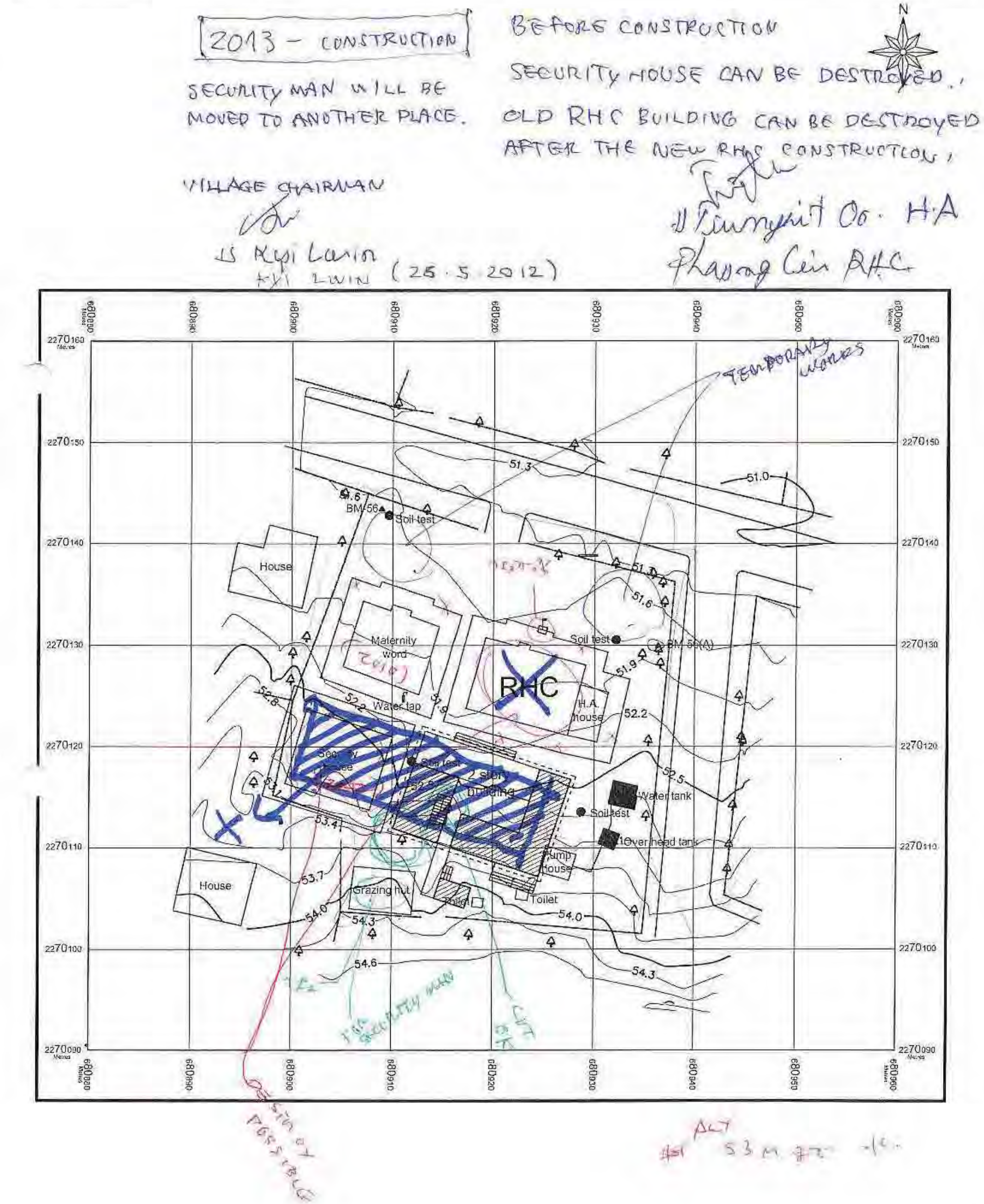
24.5.2012

添付資料-3

54(3)	SALIN TS Kan Bya RHC		Scale : 1/500

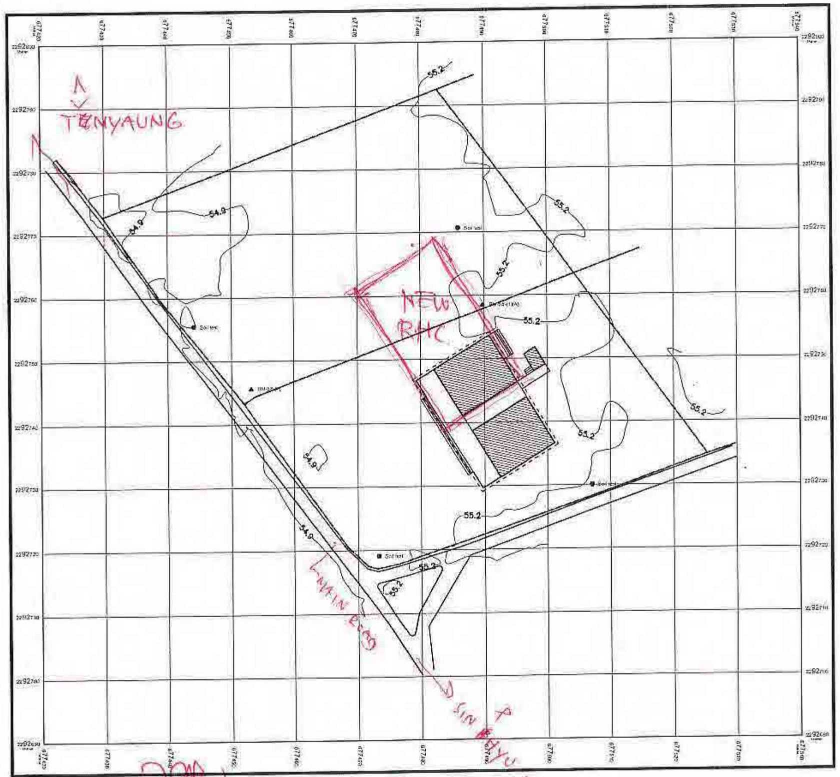


56	SALIN TS Phaung Lin RHC		Scale : 1/500



58(1)	SALIN TS / Sin Ma Kty SHC	Option 1	Scale : 1/800

U Win Soe
chairman
(Village leadership)



(Htay Lwin)
HA 1
Salin Hospital

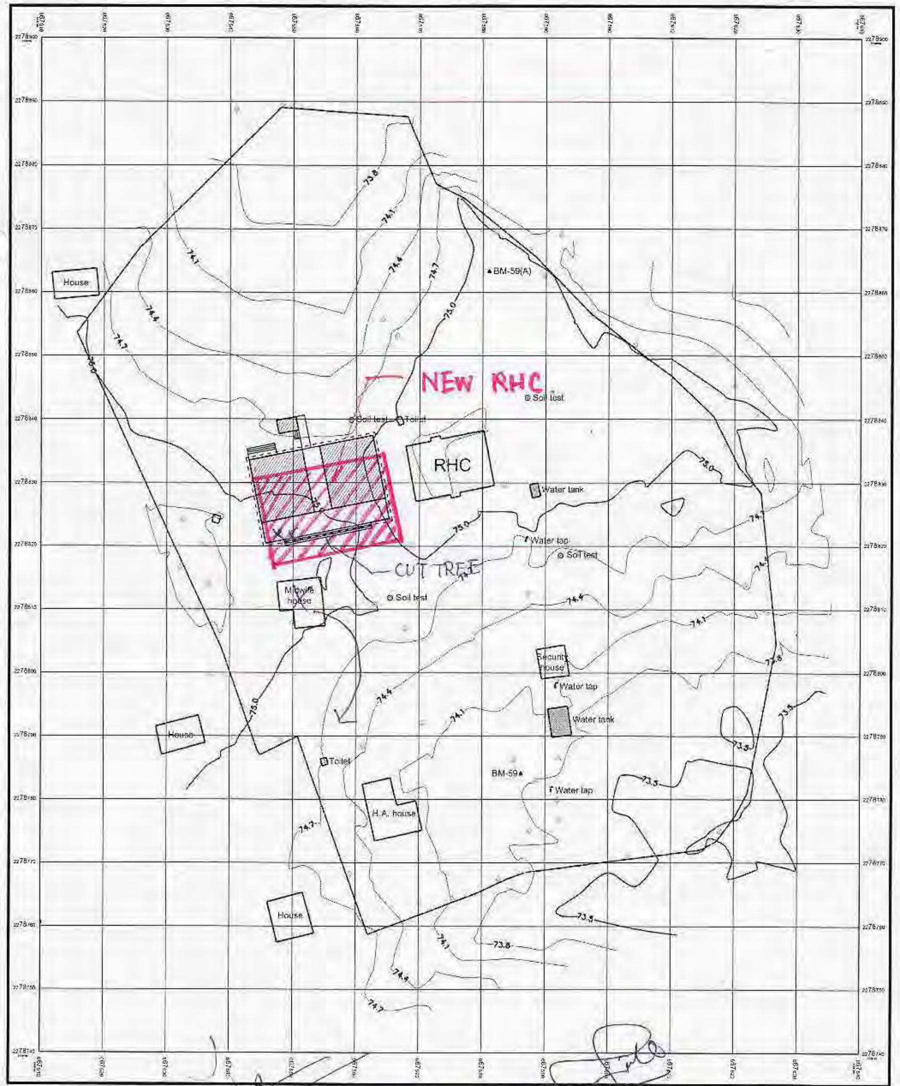
Thandar Lwin
MW
Sin makyun s/c

U Kyaw Maung
owner

Hand Pump
井 by VILLAGE → ACCEPTED
Engine Pump.

29.5.2012

59	SALIN TS / Nga Than Gaung RHC	Option 1	Scale : 1/800



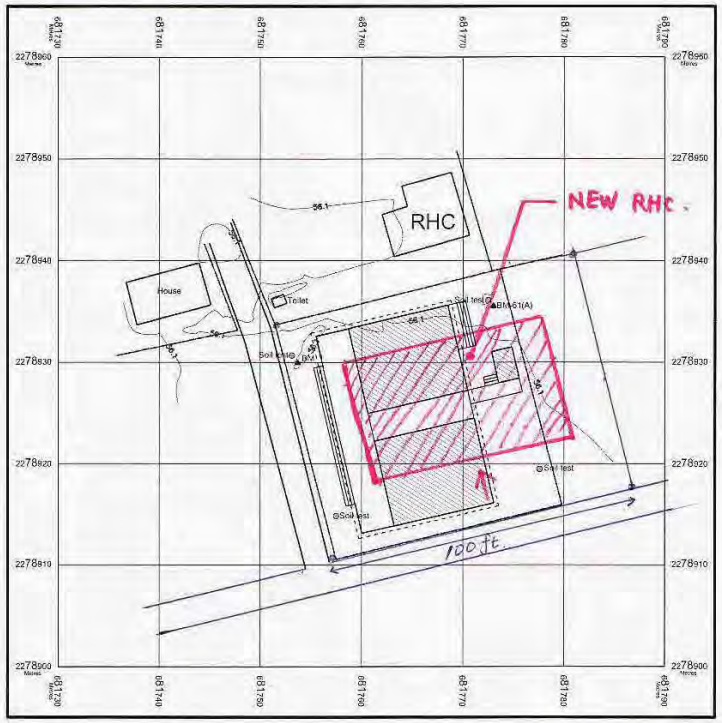
Date - 26.5.2012

(U Hla Toe)
Village / Community Leader

(U Naing Linn Htun)
HA

添付資料-3

60(1)	SALIN TS Tha Nat Kone RHC	Option 2	Scale : 1/500

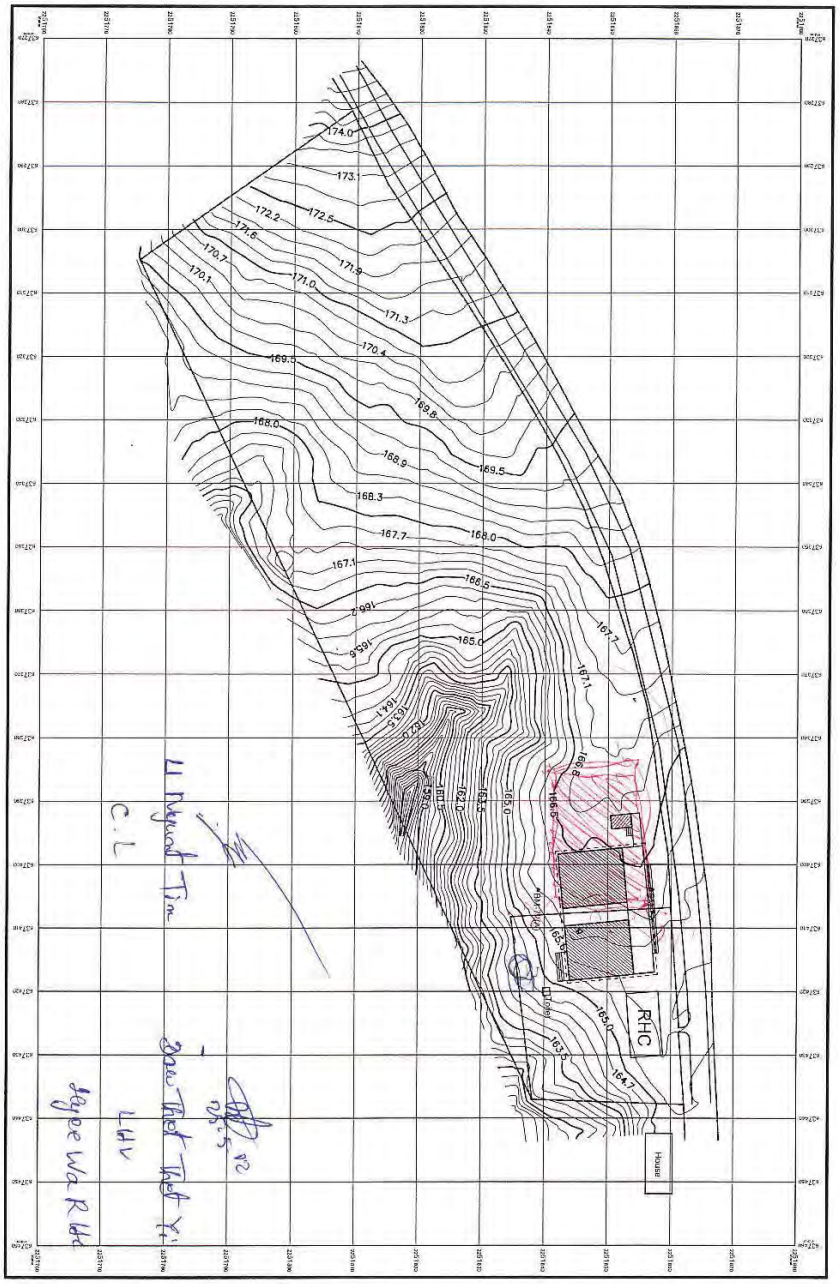


If project realize,
the site area will be extended
as above. (blue line).

(U Maung Naye)
Leader of village
Tha Nat Kone.

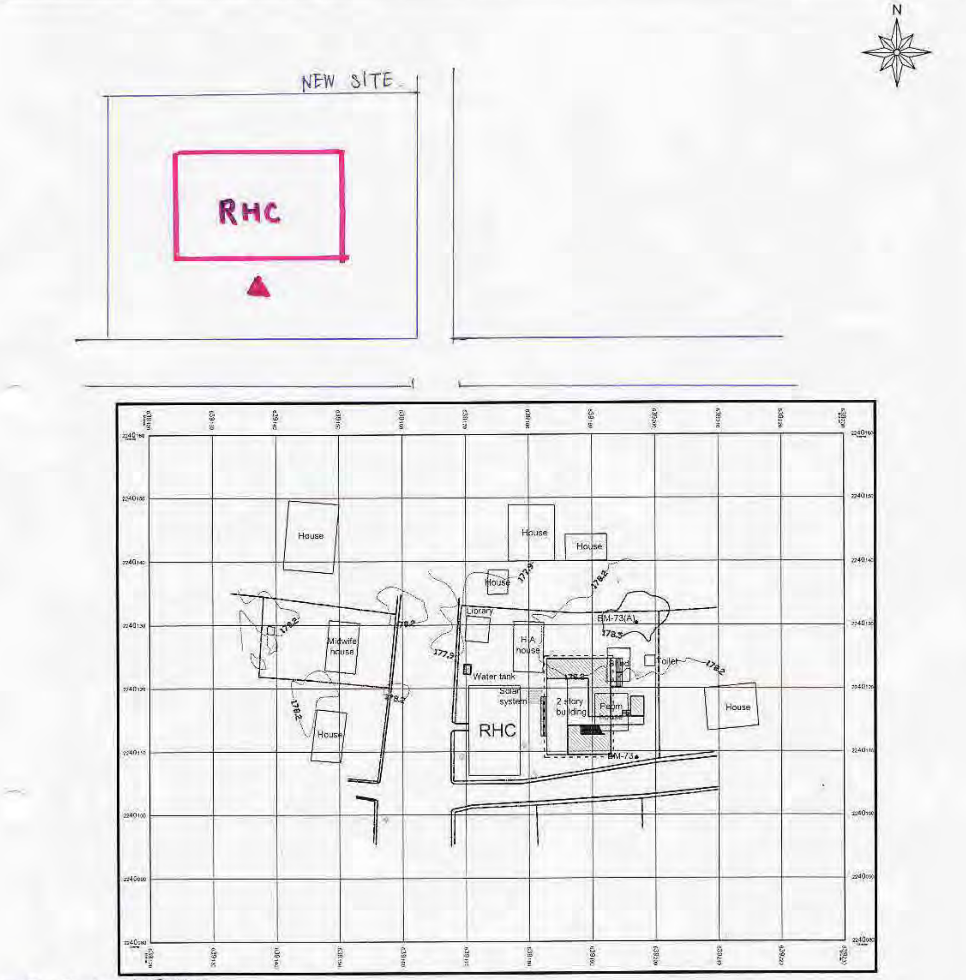
(Daw Than Hlay)
H
Tha Nat Kone RHC.

HAおよびコミュニティに同意された施設配置案



72	SAY T(.E TA YAR TS Kyee Wa RHC	Option 1	Scale : 1/800

73	SAY TOKE TA YAR TS		Scale : 1/800
	Pha Aing RHC		

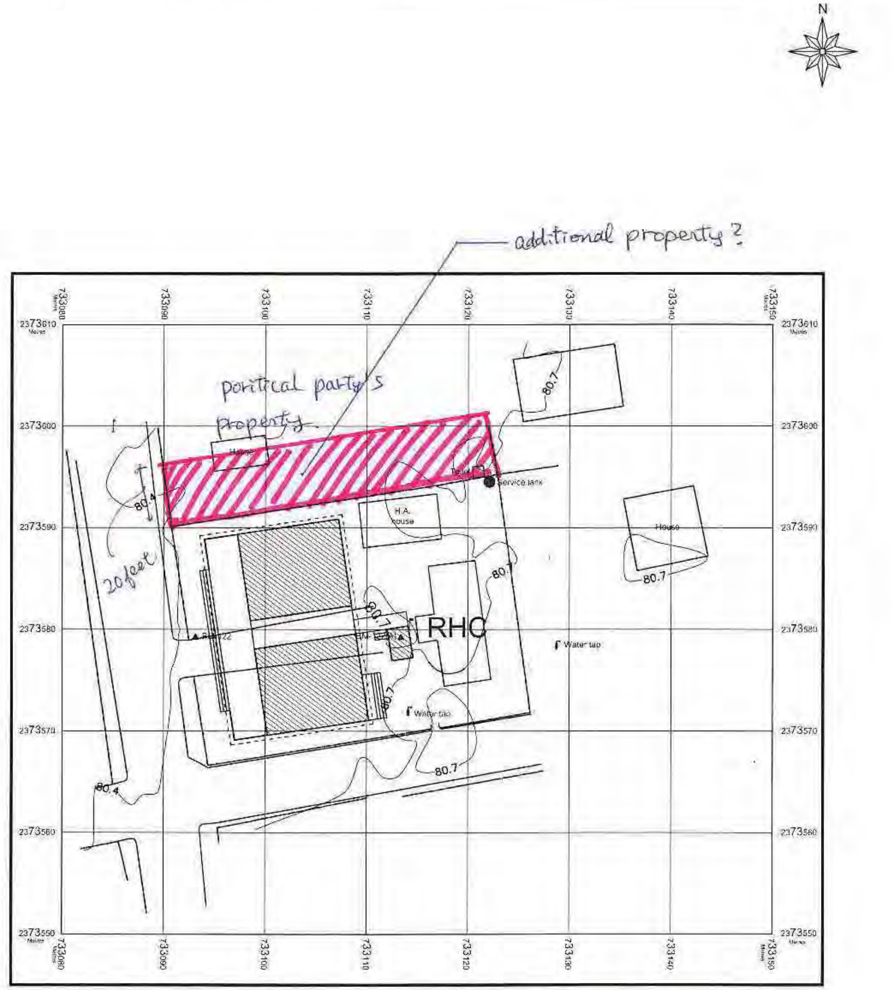


25.5.12 (FRI)

U Ko Ko Naing
HA
PHA AING RHC

U Win Naing Soe
Head leader of PHA AING village

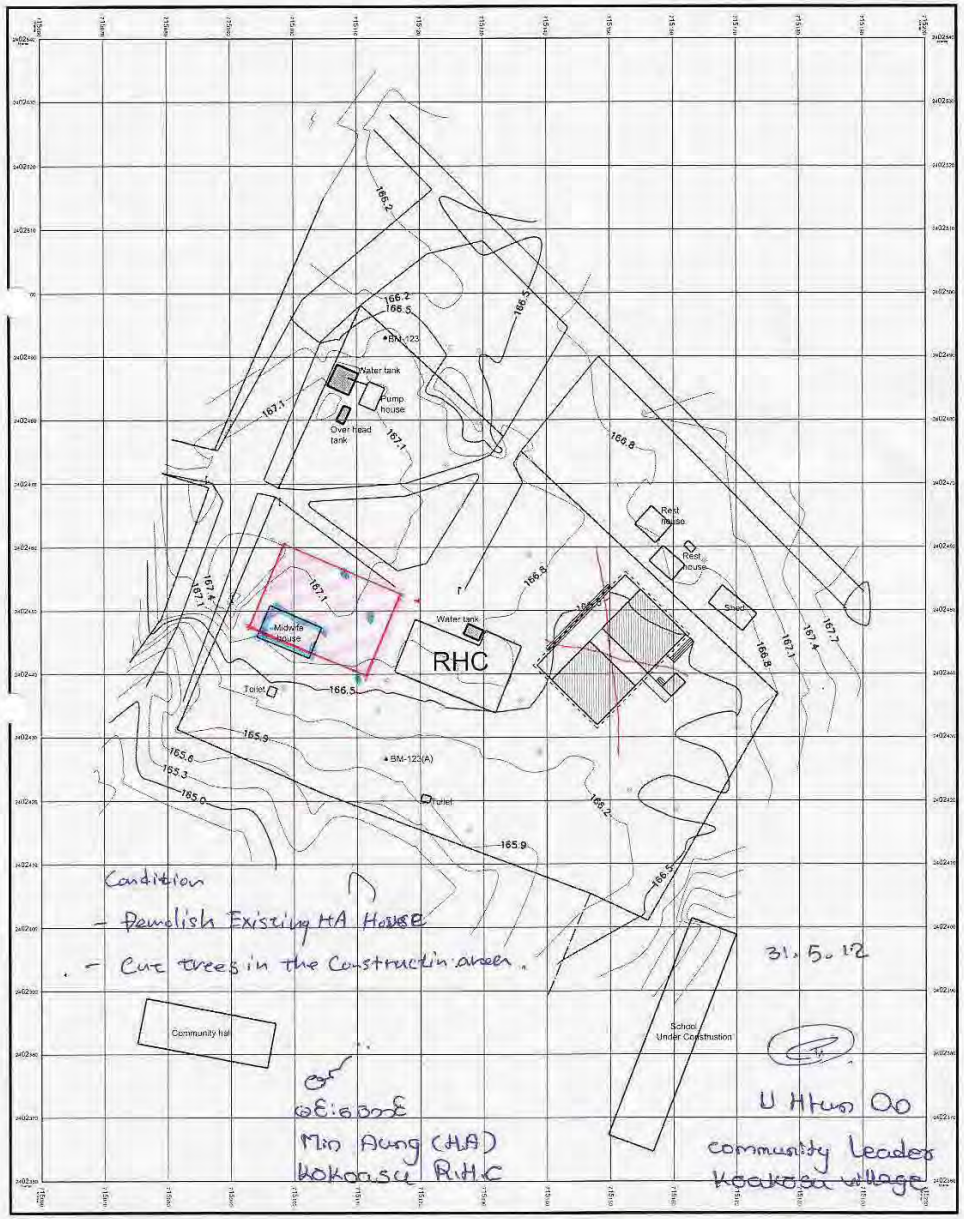
122	YA SA GYO TS	Option 2	Scale : 1/500
	Sin Ma Ye RHC		



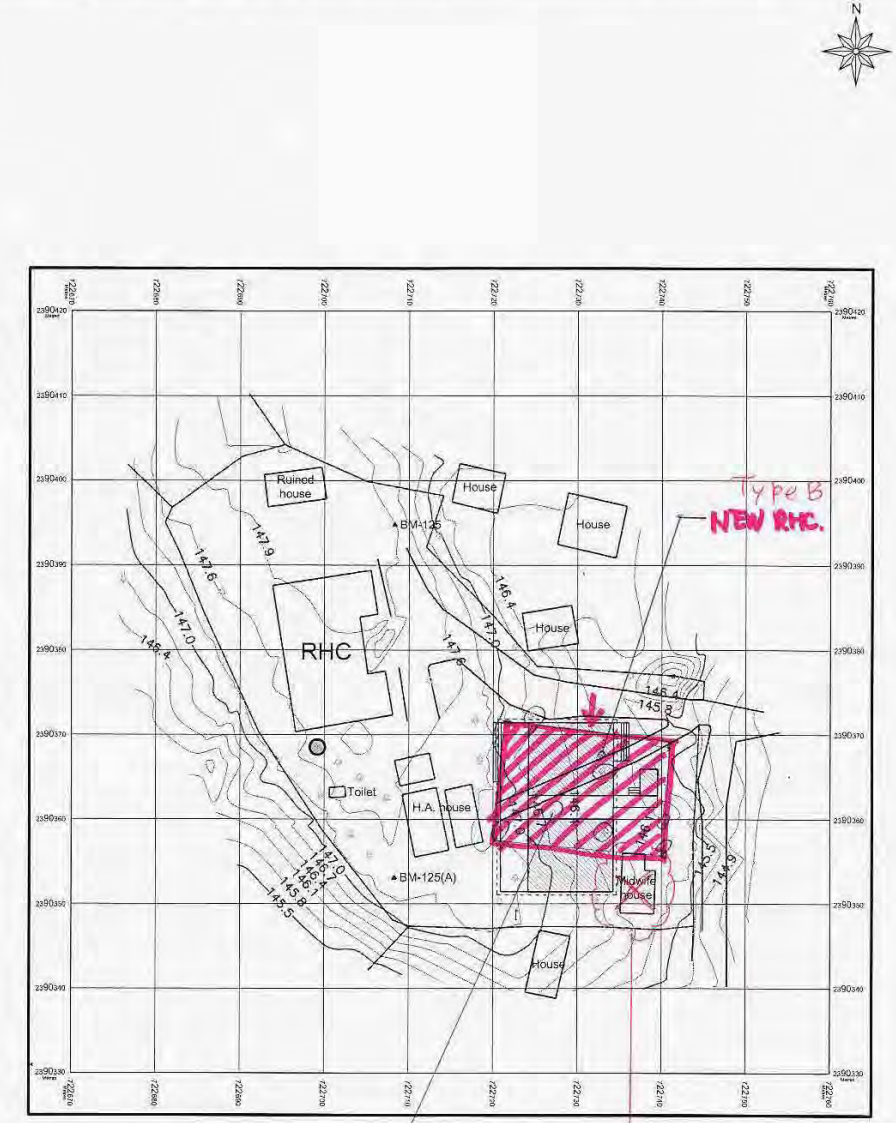
Nan Thin Thin Khaing
LHV
31. 5. 2022

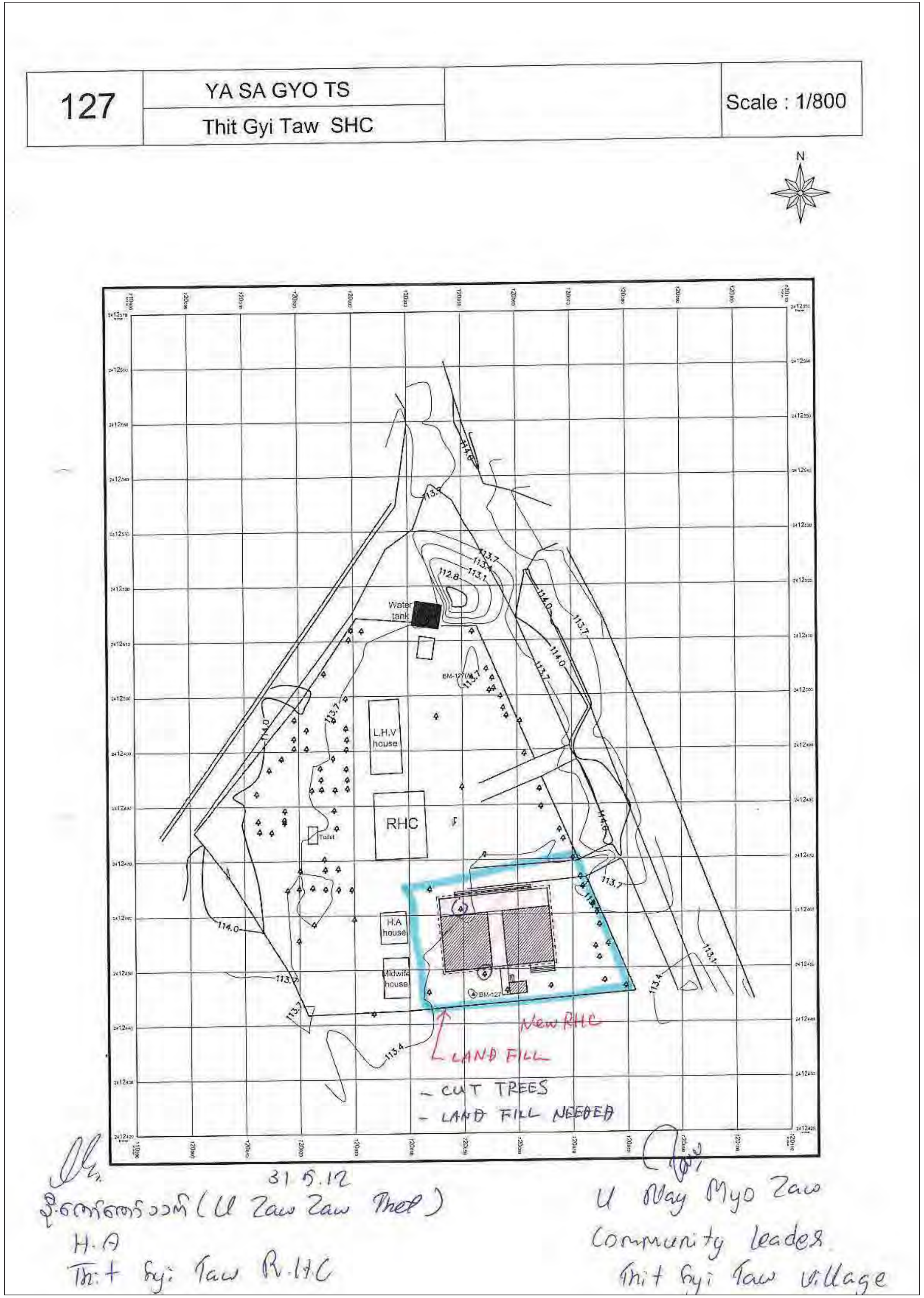
If the project realized, necessary to negotiate with village community about extending the site limit.

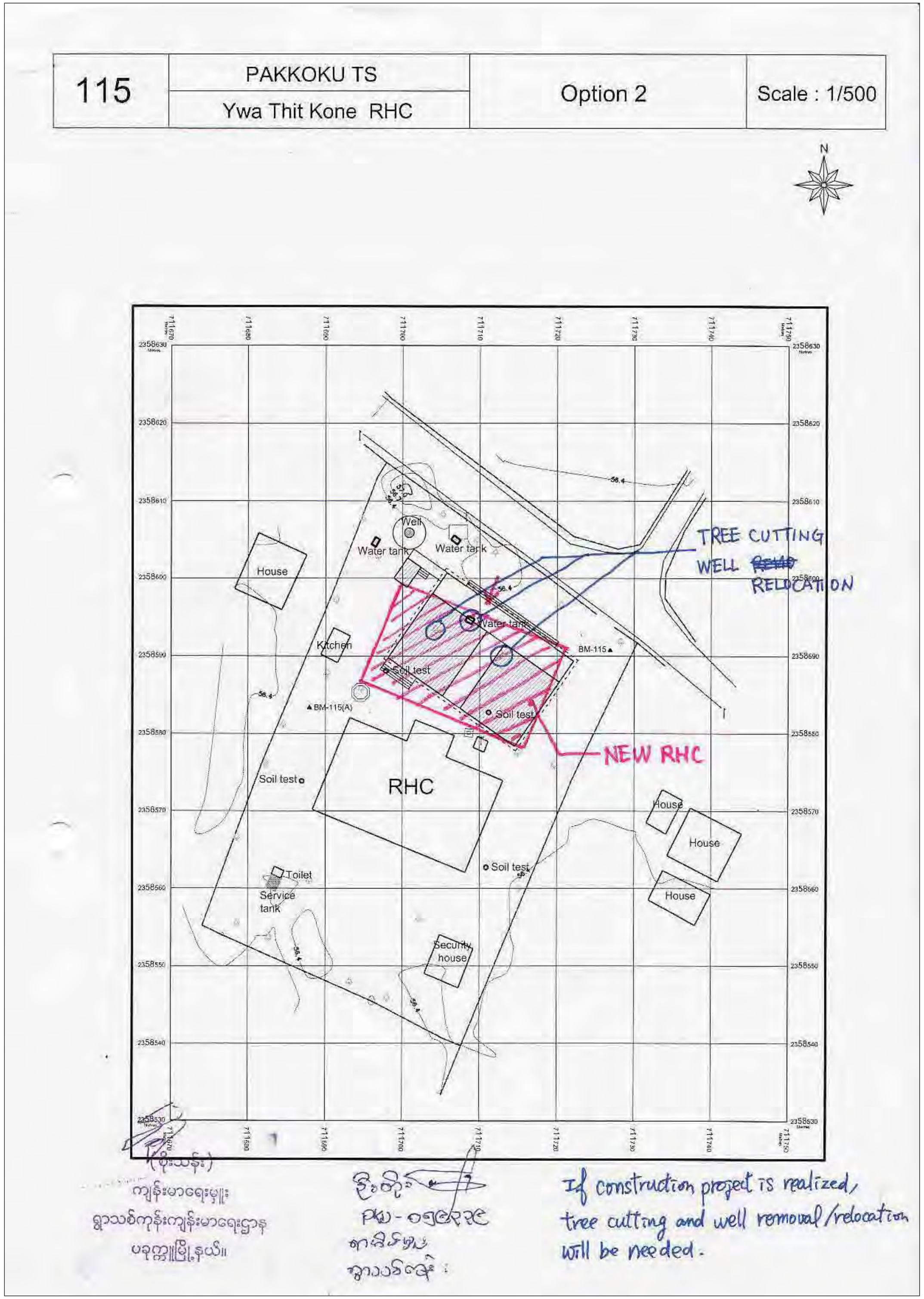
123	YA SA GYO TS Kok Ko Zu RHC		Scale : 1/800



125	YA SA GYO TS Hwe Hmyoke RHC	Option 2	Scale : 1/600




127
YA SA GYO TS
Thit Gyi Taw SHC
Scale : 1/800
N
Water tank
L.H.V house
RHC
Toilet
H.A house
Midwife house
BM-127
New RHC
LAND FILL
- CUT TREES
- LAND FILL NEEDED
31.5.12
(U Zaw Zaw Thet)
H.A
Thit Gyi Taw R.H.C
U May Myo Zaw
Community leader
Thit Gyi Taw Village

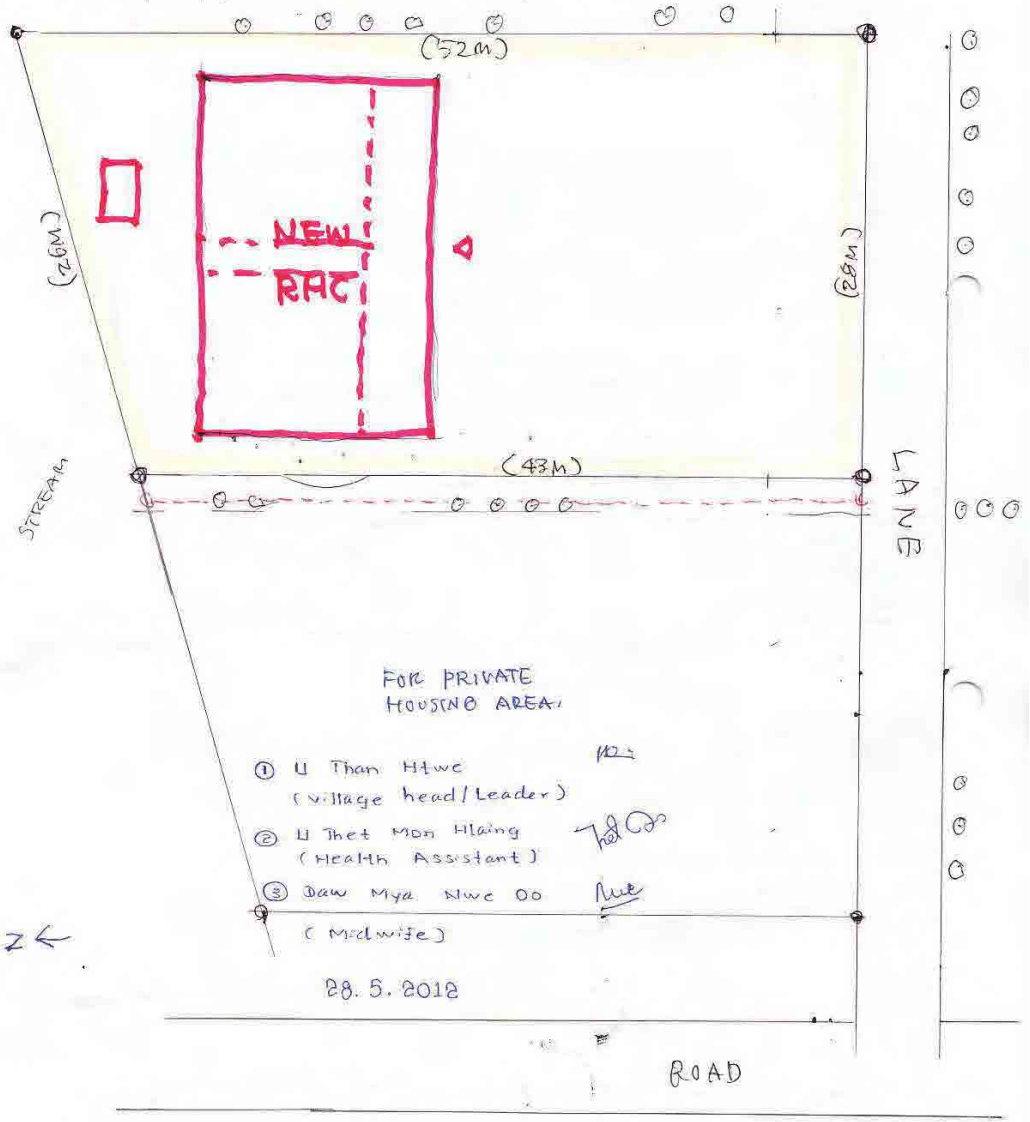

115
PAKKOKU TS
Ywa Thit Kone RHC
Option 2
Scale : 1/500
N
Well
Water tank
Water tank
House
Kitchen
Soil test
BM-115
BM-115(A)
TREE CUTTING
WELL RELOCATION
NEW RHC
RHC
Soil test
House
House
House
Toilet
Service tank
Soil test
Security house
If construction project is realized, tree cutting and well removal/relocation will be needed.

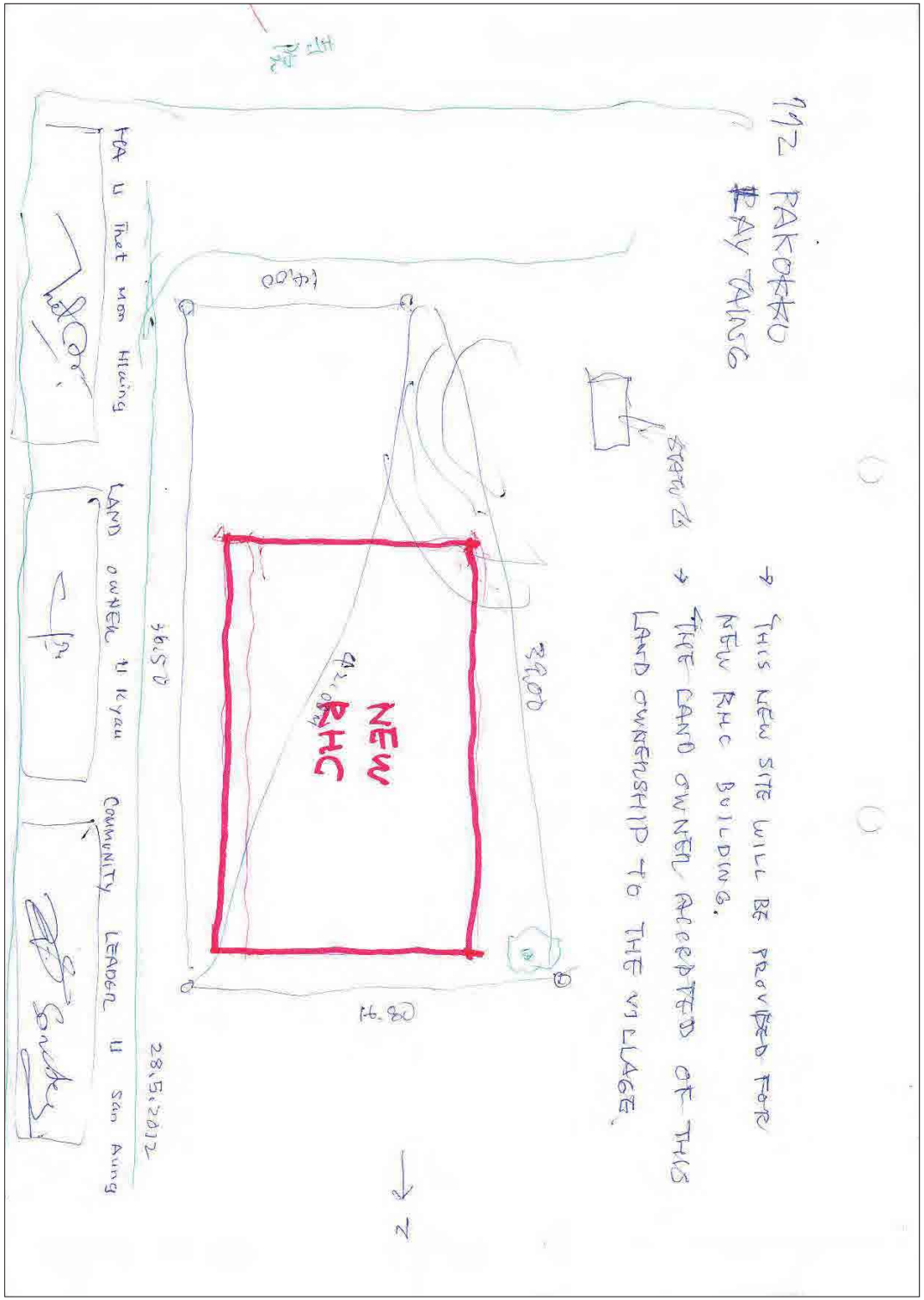
添付資料-3

HAおよびコミュニティに同意された施設配置案

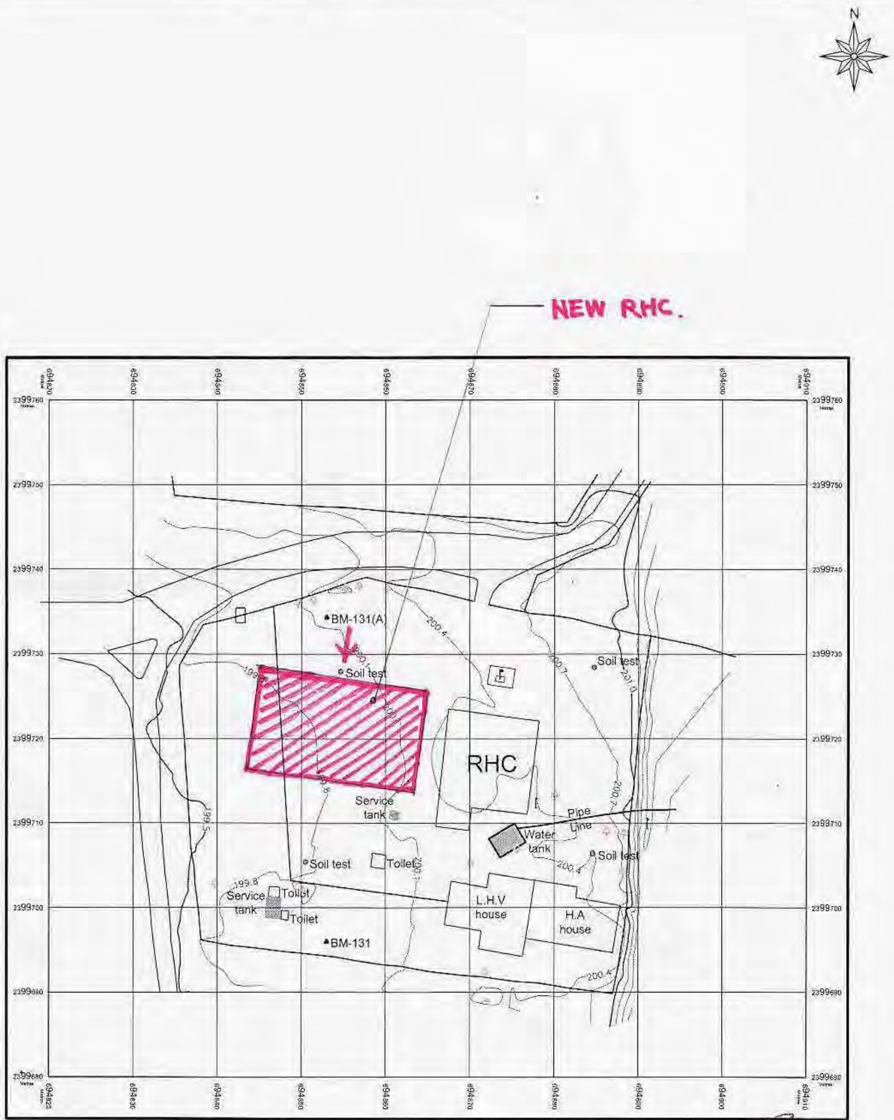
PAKOKKU / TAUNGPALU (NORTH SITE) 28 MAY 12

NEW RHC BUILDING WILL BE LOCATED 300M FROM EXISTING SHC SITE, EAST SIDE OF THE NEW LOCATION WILL BE PROVIED FOR NEW RHC.
WATER WILL BE SUPPLIED FROM PRIVATE HOUSE NEAR (100M) FROM THE NEW SITE.





131	Myaing TS Kan Net RHC		Scale : 1/600



Mee.
U Mee Thaung
Head of Community
Kan-Net Village
29. 5. 2012

29. 5. 2012
(အောင်မိုက်)
ကျန်းမာရေးမှူး

132	MYAING TS Lin Ka Taw RHC	Option 1	Scale : 1/1000

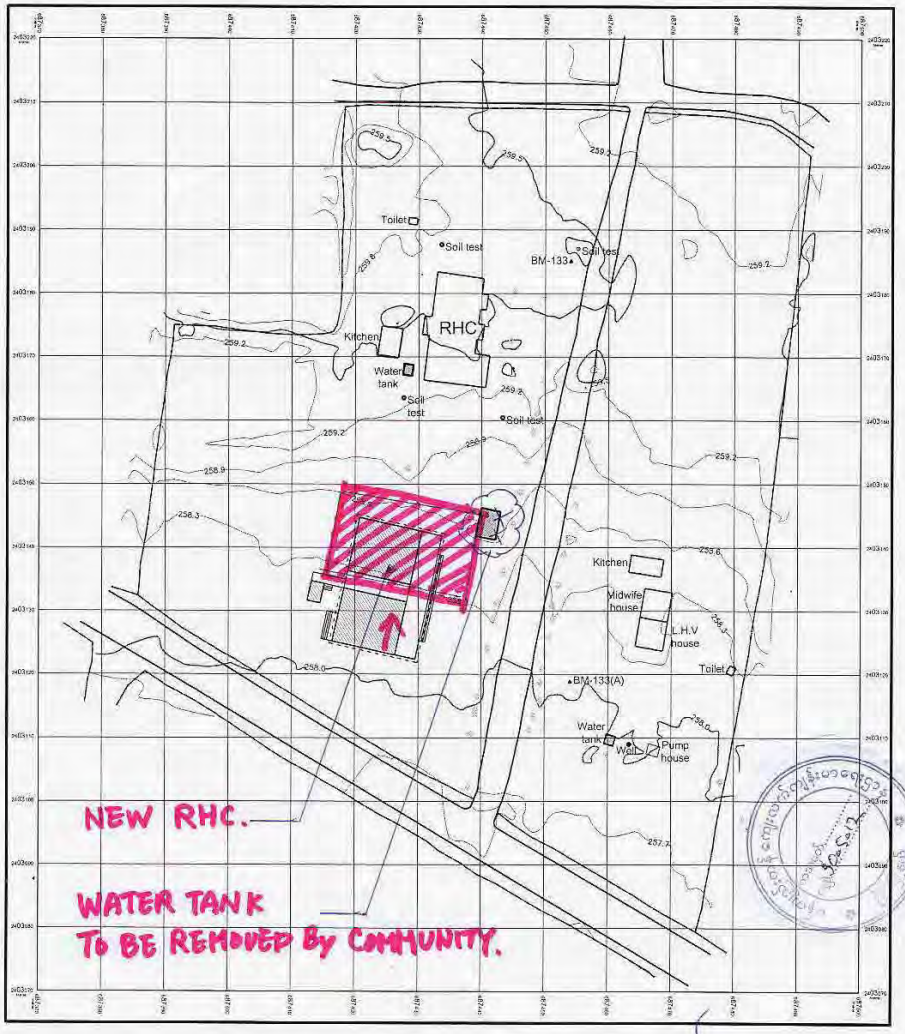
U Han 29. 5. 2012
Village Community Leader

29. 5. 12
(B.Comm, H)H.A

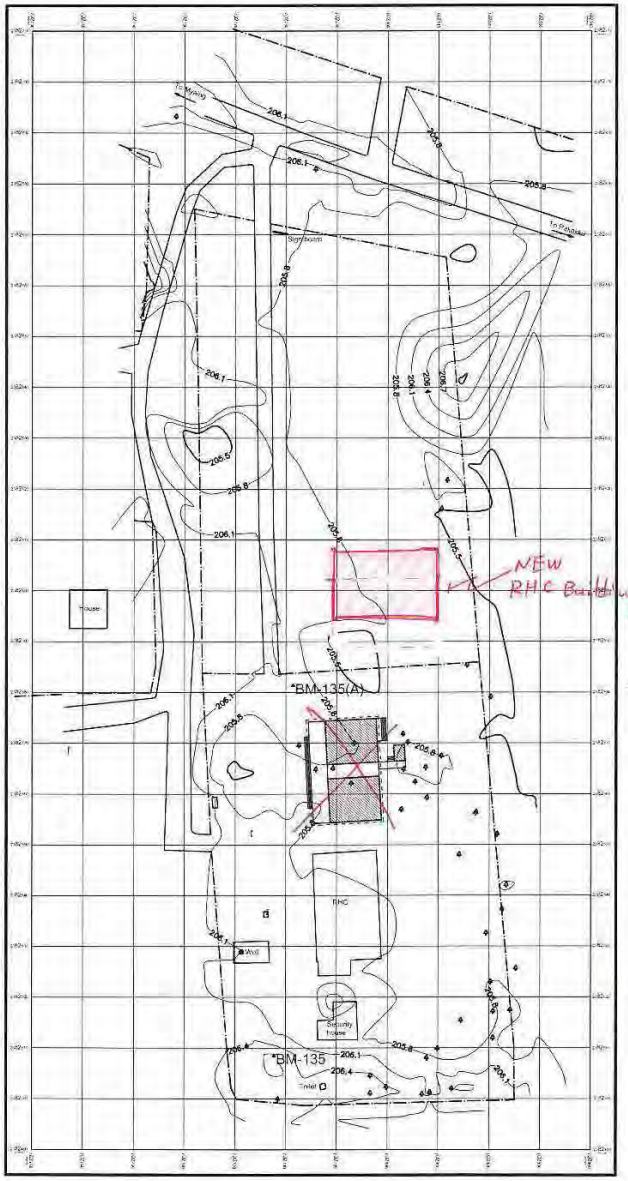
添付資料-3

HAおよびコミュニティに同意された施設配置案

133	MYAING TS Tha Ma Gyi Kan RHC	Option 1	Scale : 1/800

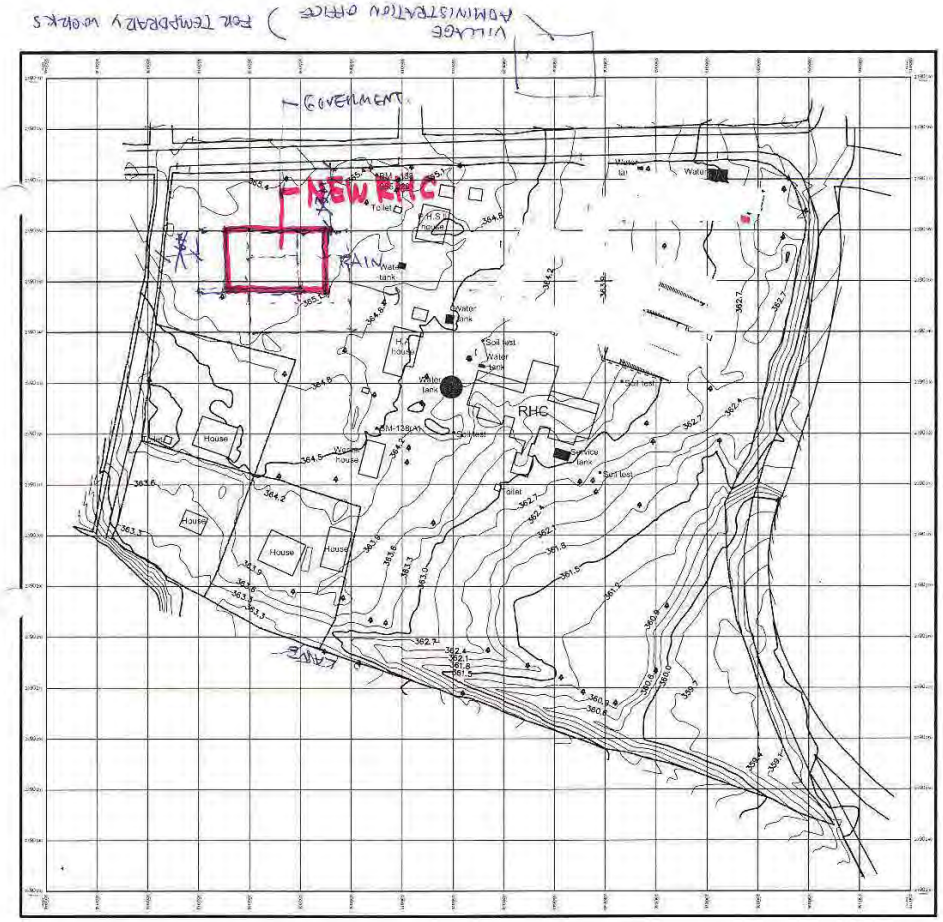


135	MYAING TS Kyauk Sauk RHC	Option 2	Scale : 1/1000



138	PAUK TS Kauk Tang Gin RHC		Scale : 1/1000

FOLLOWING LOCATION PLAN FOR NEW RHC WAS ACCEPTED.



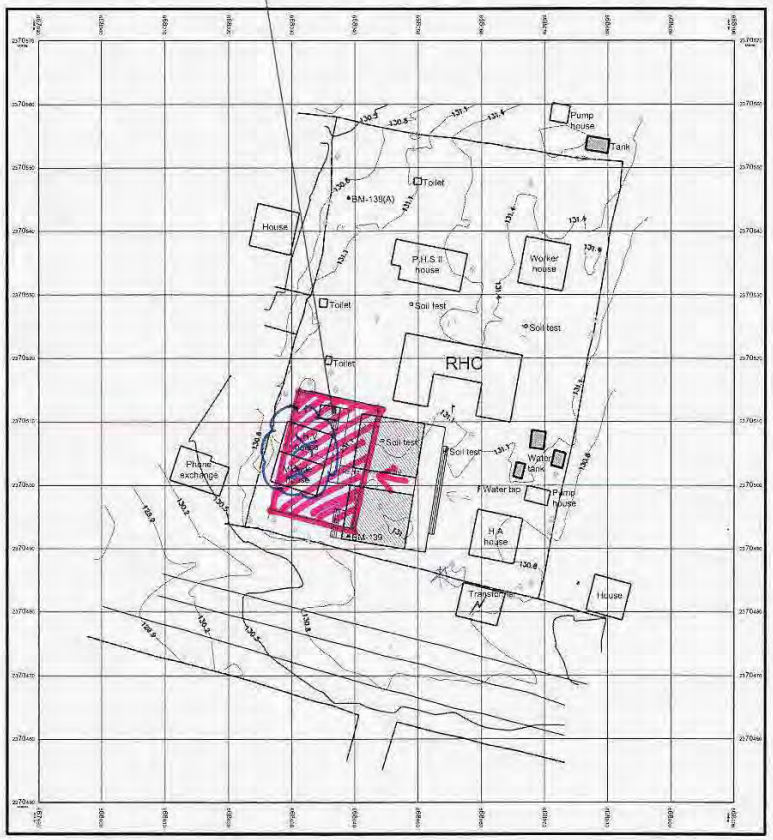
U KYAW MYINT

1. 6. 2019

1. 6. 2019

139	PAUK TS Ye Bya RHC	Option 1	Scale : 1/800

NEW RHC.



If project realized,
L.H.V. house and M.W House ~~to be~~ need to be removed.

U NAY WIN

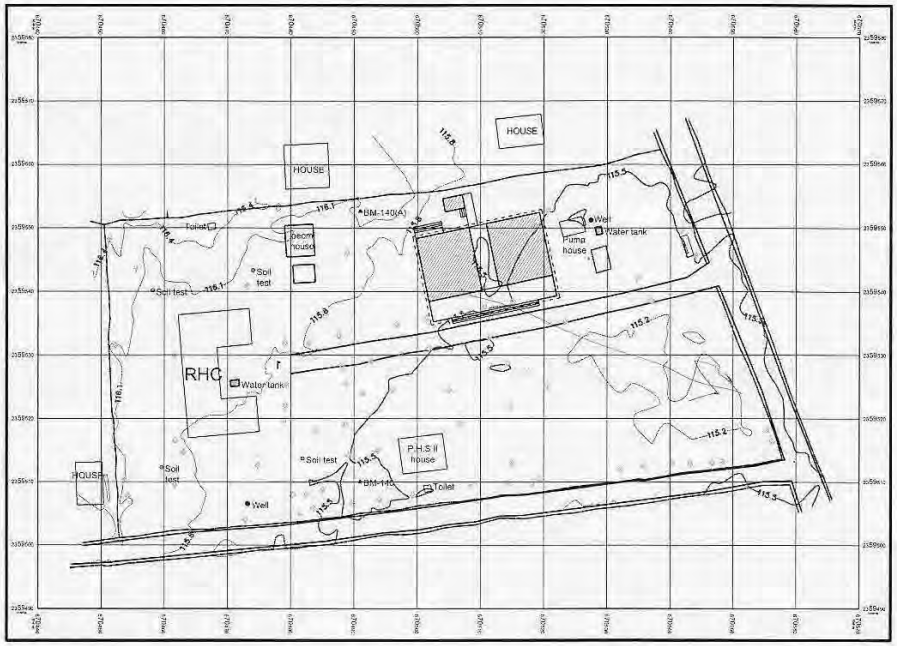
1. 6. 2019

U MYINT ETHO

1. 6. 2019

140	PAUK TS Nant Thar RHC	Option 1	Scale : 1/800

FOLLOWING LOCATION FOR NEW RHC WAS ACCEPTED.



Daw Nandar Htike
(နန္ဒာထိုက်)
အမိုးထောက်ကျန်းမာရေးမှူး
Nanthar ကျန်းမာရေးဌာန၊
2.6.12

U KYI LWIN
အုပ်ချုပ်ရေးမှူး
နှံ့ထာကျေးရွာအုပ်စု
ပေါက်မြို့နယ်၊
2.6.2012

142	PAUK TS Chaung Gu RHC	Option 1	Scale : 1/800

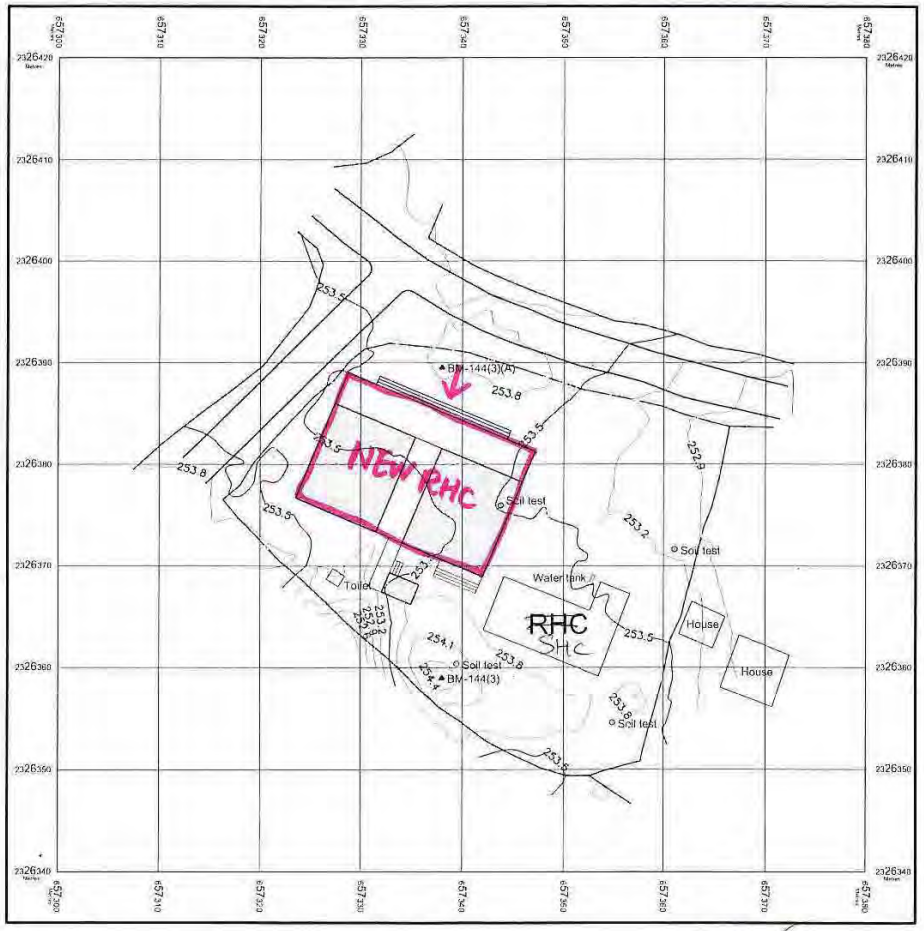
2.6.2012.

(ခင်သောင်း)
ကျန်းမာရေးမှူး
ချောင်းကျွန်းကျန်းမာရေးဌာန
ပေါက်မြို့နယ်

Ms. Khin Thaung

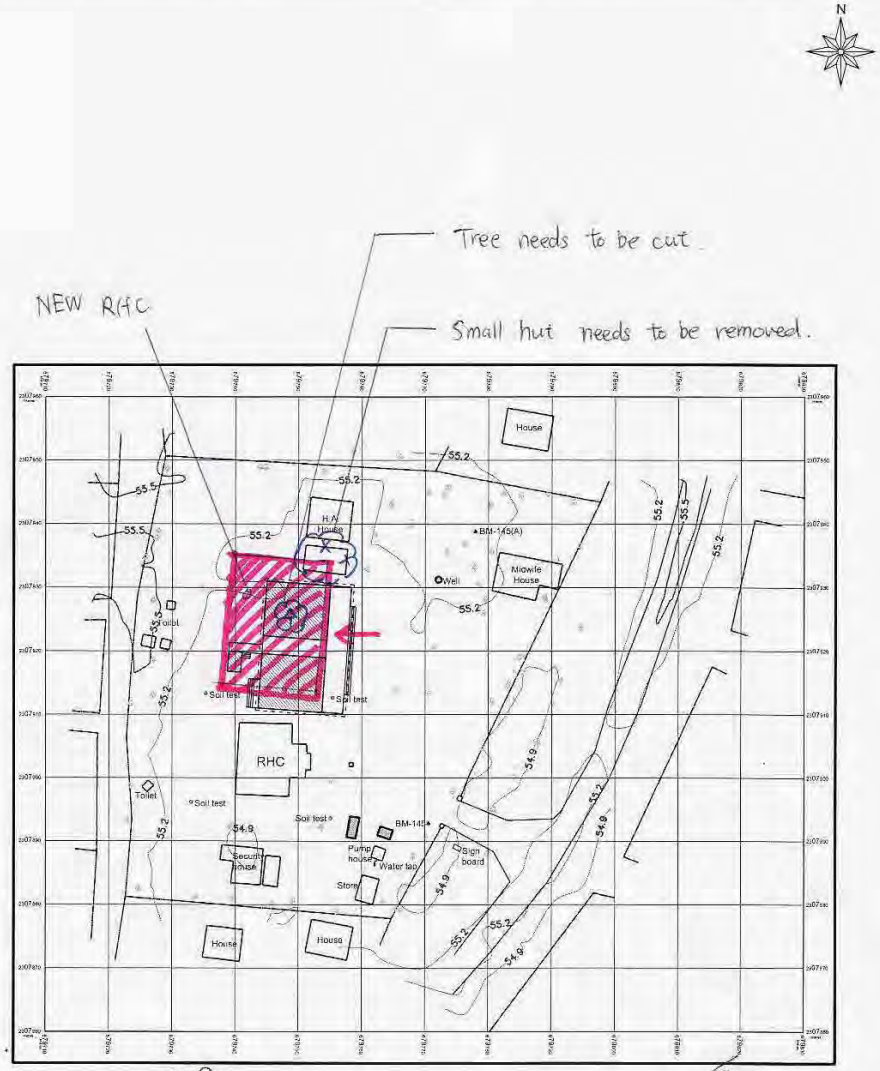
အုပ်ချုပ်ရေးမှူး
ဖျောင်းကျေးရွာအုပ်စု
ပေါက်မြို့နယ်၊
Mr. Soe Lwin.

144 (3)	SEIKPHYU TS Kyaung Yuan SHC	Option 2	Scale : 1/500



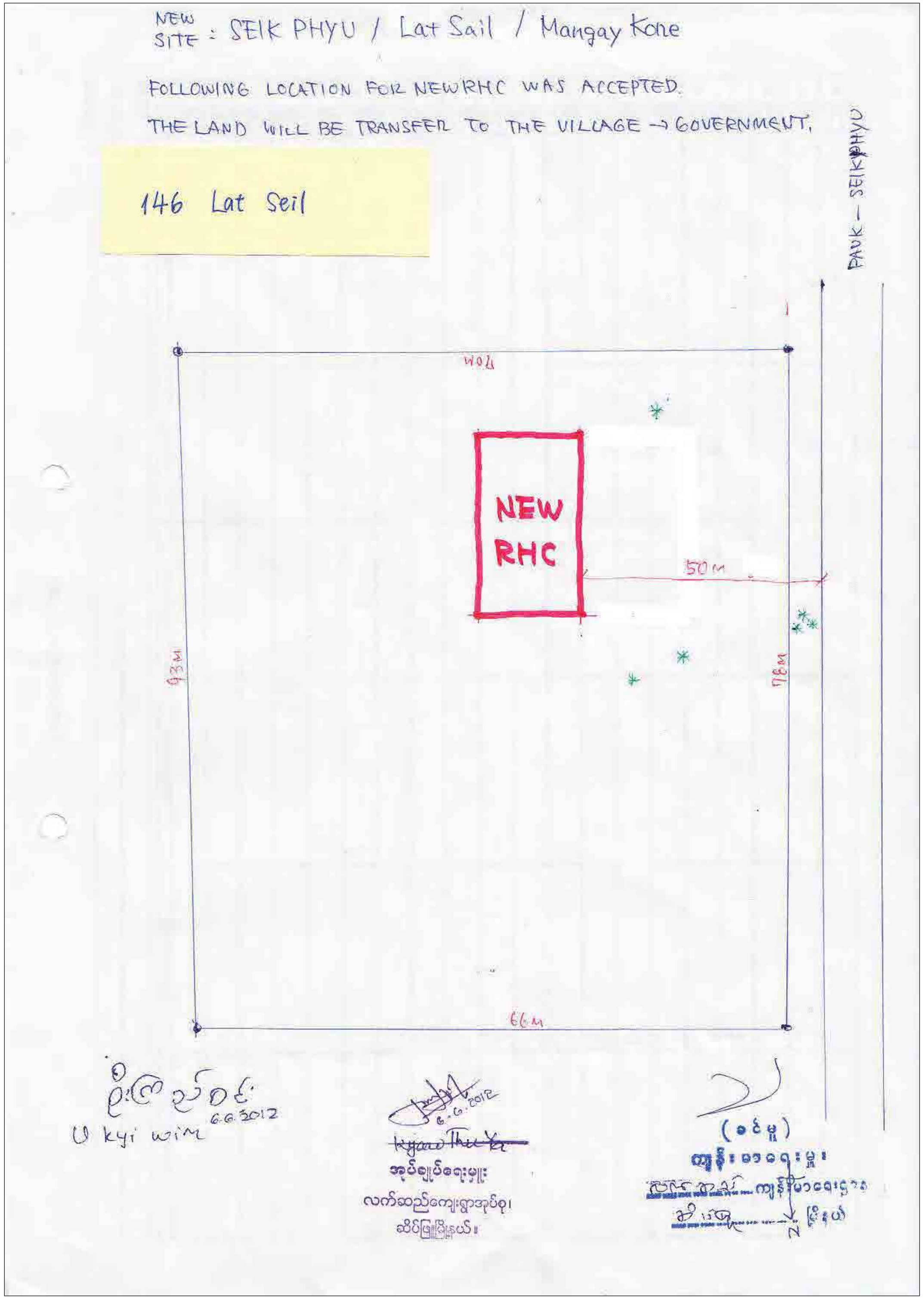
U SAW MAUNG
အုပ်ချုပ်ရေးမှူး
ကျောင်းရွာကျေးရွာအုပ်စု၊
ဆိပ်ဖြူမြို့နယ်၊
6. 6. 2013

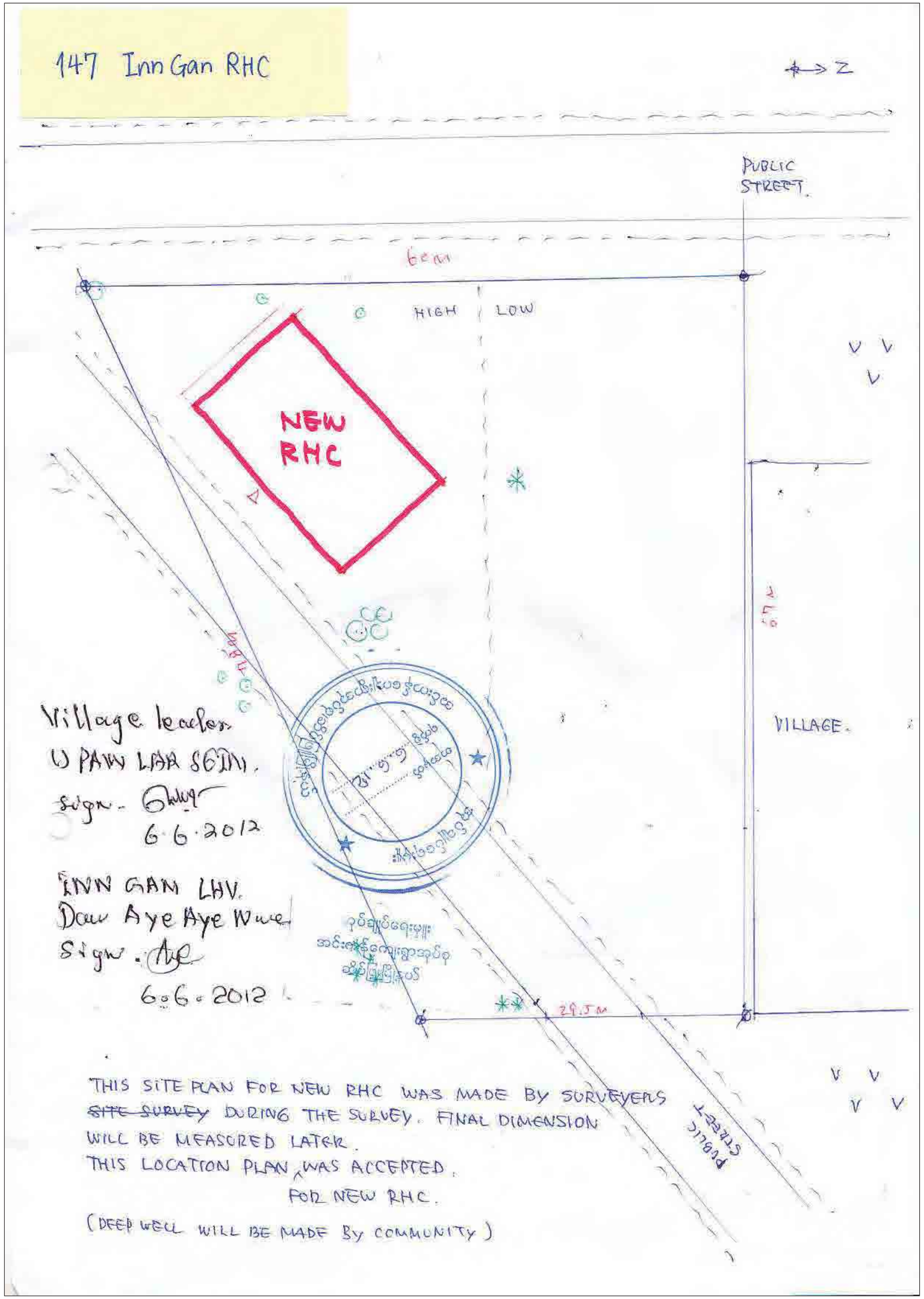
145	SEIKPHYU TS Auk Seik RHC	Option 2	Scale : 1/800



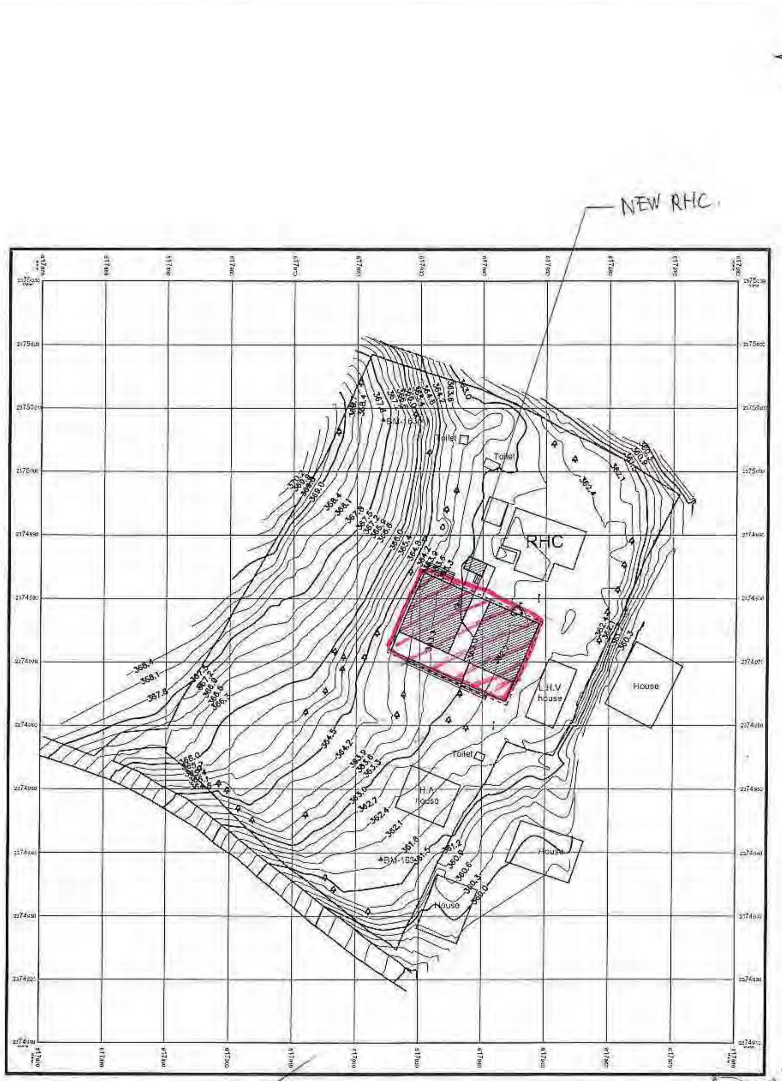
U MYA THEIN
အုပ်ချုပ်ရေးမှူး
မြင်ကာဝကျေးရွာအုပ်စု၊
ဆိပ်ဖြူမြို့နယ်၊
6. 6. 2013.

U MYINT SWE
H.A AUK-SEIK RHC.
6. 6. 2013


NEW SITE : SEIK PHYU / Lat Sail / Mangay Kone
FOLLOWING LOCATION FOR NEW RHC WAS ACCEPTED.
THE LAND WILL BE TRANSFER TO THE VILLAGE → GOVERNMENT.
146 Lat Seil
PAUK – SEIKPHYU
NEW RHC
50M
66M
78M
U kyi win
6.6.2012


147 Inn Gan RHC
PUBLIC STREET
HIGH
LOW
NEW RHC
VILLAGE.
Village leader
U PAW LAR SEIN.
6.6.2012
INN GAN LHV.
Daw Aye Aye Nwe
6.6.2012
THIS SITE PLAN FOR NEW RHC WAS MADE BY SURVEYERS DURING THE SURVEY. FINAL DIMENSION WILL BE MEASURED LATER.
THIS LOCATION PLAN WAS ACCEPTED FOR NEW RHC.
(DEEP WELL WILL BE MADE BY COMMUNITY)

163	SAW TS / Mi Ai RHC		Scale : 1/800



Pe Bein
Health Assistant
HA. 28/49
4th, June, 2012

Aung Myint Aye
Village Administrator
Mi Ai, Kyaukpyu

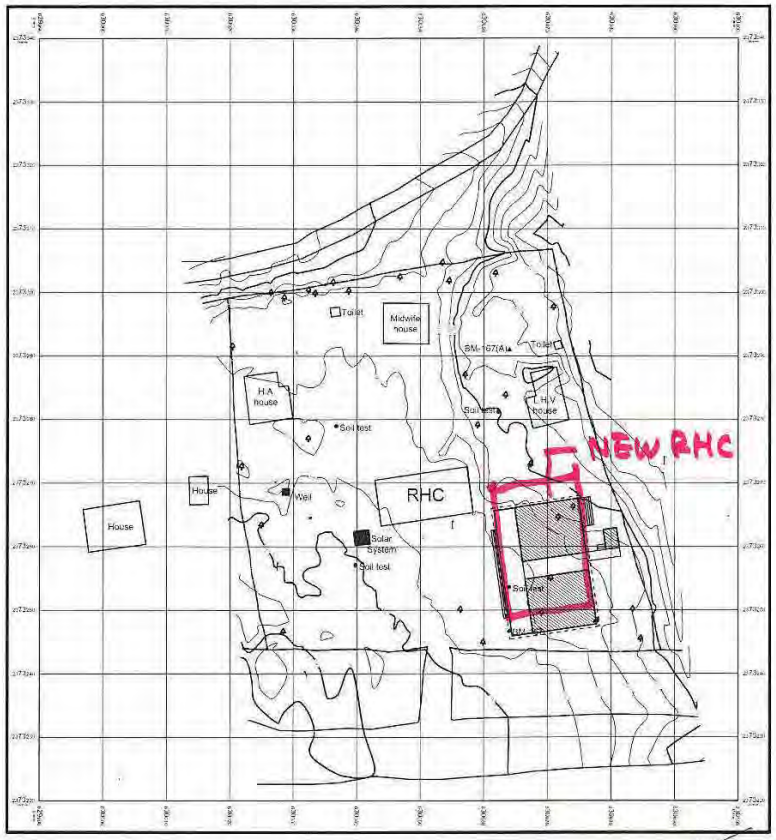
166	SAW TS / Ka Chaung RHC	Option 1	Scale : 1/500

U PE THAN
5. 6. 2012

U Aung Zaw Myint
Ka Chaung RHC
5-6-2012

167	SAW TS Ta Byin RHC	Option 1	Scale : 1/800

FOLLOWING LOCATION PLAN FOR NEW RHC WAS ACCEPTED.



U OM SHING

(U KYAW NAING)
ကျော်ရွှေအုပ်စုအုပ်ချုပ်ရေးမှူး
တပြင်းကျေးရွာအုပ်စု
ဧကျောက်ထူမြို့နယ်ခွဲ၊ဧဆော်မြို့နယ်
4. 6. 2012