

**The Project for  
Improvement of Road Technology  
in Disaster Affected Area in Myanmar**

**Report on Site Survey for Roads  
in Ayeyarwady Region  
(PP-1)**

**March 2013**

**Japan International Cooperation Agency  
(JICA)**

**Pegasus Engineering Corporation  
Oriental Consultants Global Co., Ltd.**

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**REPORT**  
**ON**  
**SITE SURVEY FOR ROADS**  
**IN AYEYARWADY REGION**  
**IN**  
**THE REPUBLIC OF THE UNION OF MYANMAR**

**MARCH 2013**

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## CAPTER-1 INTRODUCTION

The main purpose of the site survey for roads in Ayeyarwady Region is to grasp current situation of damage, repairing and new construction of road & bridge in Ayeyarwady Region and to support “**The Project for Improvement of Road & Bridge Technology in Disaster Affected Area**”, where the areas are high risk areas from natural disaster such as cyclone, heavy rainfall and flood on soft ground. It also expect that the results of this survey can be references for implementation of on-going projects in these regions. Fukken Co., Ltd. is assigned to conduct surveying works to obtain condition of road and bridge in project areas.

Field survey was carried out in (7) routes in Ayeyarwady Region. The project activities started on 7<sup>th</sup> February 2013 and all site works completed on 14<sup>th</sup> March 2013.

The site survey included the followings.

- a) Verification between the inventory and actual field situation.
- b) Road; to check current road condition, distance between major places, width, road design and specification, etc;
- c) Damage and risk of current road and bridge, in particular caused by weak soil stratum and natural disaster (heavy rain, flood, tidal wave, etc).
- d) Digital photo and location/ elevation data (by GPS) of road condition (by section and damaged, etc).
- e) Type of vehicle and intensity at major road.

### 1.1 Candidate sites for Pilot Project

The project candidate side consists of (7) routes of road, which located at delta area in Ayeyarwady Region. The locations of project area are indicated as Figure -3.1.1.

### 1.2 Project Duration and Personnel

The field study for surveying of road in Ayeyarwady Region was started on 8<sup>th</sup> February 2013 and completed on 14<sup>th</sup> March 2013. The report for Site Survey for Roads in Ayeyarwady Region was completed on 15<sup>th</sup> March 2013.

The executed schedule in detail is illustrated as Table-1.2.1, indicating the organization chart for personnel of the operation and their responsibilities, including list of civil engineers, staff for field survey and entire person involved in this operation.



### **1.3 Scope of Work**

The scope of work includes five portions; data collection from Public Work and analysis of road inventory, preparation of field survey, field survey (Differential GPS Survey, Soil Sampling and General Information), transportation of the sampled soil to Road Research Laboratory (RRL) of Public Work in Yangon and report preparation

#### **1.3.1 Information Data Collection**

Data collection on Road inventory from Public Works is including as below;

- Map of road network
- Design standard and specification of roads
- Construction and maintenance guidelines and manuals

#### **1.3.2 Field Survey Plan**

- a) Differential GPS Survey
- b) Soil Sampling
- c) General Information (Approximate number of people who may use the road, approximate daily traffic volume, flood level and photograph at survey points)

#### **1.3.3 Field Survey**

Following candidate routes of road sections were survey in Ayeyarwady Region.

Total numbers of field survey location are 16 locations.

- On Route No.7 (Pyapon-Kyaonkadun-Dawnyein-Amar) (6 locations survey points)
- On Route No.2 ( Mawlamyinegyum-Hlaingbone-Thitpoak-Kwinpouk-Pyinzalu) (2 locations survey points)
- On Route No.6 (Bogalay-Setsan) (2 locations, the left bank side of Bogalay Bridge and the left bank side of ThaKan Bridge survey points)
- On Route No.10 (Bogalay-Mawlamyinegyum-Wakema-Myaungmya) (2 locations of Kywe Chan Bridge survey points)
- On Route No.3 (Labutta-Tingangyi-Pyinzalu) (1 location survey point)
- On Route No.4 (Labutta-Thongwa-Oaktwin-Hteiksun) (2 locations survey point)
- On Route No.5 (Bogalay-Kyeinchaung-Katonkani) (1 location survey point)

### **1.3.4 Report**

Report on the Candidate Sites for Pilot Project on surveying existing condition of the roads condition in specified location as per clause (1.3.3) was prepared and submitted to JICA Myanmar Office on 15<sup>th</sup> March 2013 as planned and this report consists of four chapters and eight annexes. The chapter (1) includes introduction, candidate sites for pilot project, project duration and scope of investigation work. The chapter (2) indicated contents of field survey. The findings, laboratory test for soil samples, plan map and GPS map were described detail in chapter (3) and (4) respectively.

Annex-A showed the History of (11) Routes of Road Network at Delta Area in Ayeyarwady Region. Annex-B showed photo of present road condition. Annex-C showed the photo of interview of local residents and Annex-D showed the photo of Differential GPS Survey Activities Record. Annex-E showed the photo of Soil Samples location and Annex-F showed detail GPS Observation Data.



## CAPTER-2 PREPARATION ON FIELD SURVEY

### 2.1 Information and Data Collection

Information and data regarding the History of (11) Routes of Road Network at Delta Area in Ayeyarwady Region were collected from Public Works with Myanmar Version and the survey team translated from Myanmar Version to English Version as appropriately as possible.

### 2.2 Work Plan for Field Survey

Based on information data and facts collected from Public Works, following work plans were drawn for field survey.

### 2.3 Field Survey Work on Ayeyarwady Region

The detailed field survey work for Road in Ayeyarwady Region is as follow;

Sr.	Date	Field Survey Place	Remarks
1	15.2.2013	Yangon to Phyarpon and Route-7 area (Pyapon to Amar) (6 locations )	Over night at Phyarpon By Car Do Survey, interview and take soil samples
2	16.2.2013	Route-6 (Bogalay Bridge' left bank~ThaKan Bridge' right bank side) (2 locations) and Route-10 area (Bogalay~Kywe Chan Bridge' left & right bank sides)	Over night at Bogalay By car and boat Do survey, interview and take soil samples
3	17.2.2013	Route-5 (Bogalay ~ Mithwechaung) (1 location) and Route-10(Bogalay~Mawlamyine-gyum) (2 locations)	Over night at Bogalay By car, boat, motorbikes Do survey, interview and take soil sample
4	18.2.2013	Bogalay to Mawlamyine-gyum	Over night at Mawlamyine-gyum By car
5	19.2.2013	Route-10 (Mawlamyine-gyum ~ Bogalay) (2 locations) and Route-6 (Bogalay bridge' left bank ~ ThaKan Bridge' left bank side)	Over night at Mawlamyine-gyum By car, boat, motorbikes Do survey, interview and take soil samples
6	20.2.2013	Route-2 (Mawlamyine-gyum ~ Sa LaungGya village) (2 locations) and Sa LaungGya ~ Hlaing Bone ~ Kyaung-ma-nge ~ Wakema	Over night at Wakema Township By car, boat, motorbikes Do Survey, interview and take soil samples
7	21.2.2013	Wakema ~ Myaungmya ~ Labutta and Route-3 (Labutta ~ Tin-gan-gyi village) (1 location)	Over night at Labutta By car Do Survey, interview and take soil samples

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<b>Sr.</b>	<b>Date</b>	<b>Field Survey Place</b>	<b>Remarks</b>
8	22.2.2013	Route-4 (Labutta ~ Ye Saing village)	Arrived Yangon at 1830 PM, By car Do Survey, interview and take soil sample
9	5.3.2013	Yangon to Labutta and Route-4 (Labutta ~ Labuttalot village) (1 location)	Over night at Labutta By car Do Survey, interview and take soil sample
10	6.3.2013	Labutta to Phyarpon	Over night at Phyarpon
11	7.3.2013	Route-7 (Phyarpon ~ Kyaonkadun ~ Dawnyein ~ Amar) (6 locations)	Over night at Phyarpon By car Do Survey, interview
		Yangon to Phyarpon	Over night at Phyarpon By car
12	8.3.2013	Phyarpon ~ Bogalay, Route-10 (Bogalay ~ Kywe Chan Bridge' left and right bank sides) (2 locations) and Route-6 (Bogalay ~ ThaKan Bridge' left bank) (2 locations)	Over night at Bogalay By car and boat Do survey and interview
		Route-7 (Phyarpon ~ Kyaonkadun ~ Dawnyein ~ Amar) (4 locations)	Over night at Phyarpon By car Do DGPS Survey
13	9.3.2013	Route-5 (Bogalay ~ Kyeinchaung ~ Chaung-bel-gyi village) (1 location)	Over night at Bogalay By car, boat, motorbike Do survey and interview
		Route-6 (Bogalay ~ ThaKan Bridge' left bank) (2 locations) and Route-5 (Bogalay ~ Kyeinchaung ) (1 location)	Over night at Bogalay By car and motorbikes Do DGPS Survey
14	10.3.2013	Bogalay ~ Yangon	Arrived Yangon at 1530 PM
		Route-10 (Bogalay ~ Kywe Chan Bridge' left and right bank sides) (2 locations) and Route-7 (Phyarpon ~ Kyaonkadun) (2 locations)	Over night at Bogalay By boat and car Do DGPS Survey
15	11.3.2013	Bogalay ~ Mawlamyine-gyum and Route-2 (Mawlamyine-gyum ~ Hlaingbone ~ Sa-Laung-Kya village) (2 locations)	Over night at Bogalay By boat and motorbikes Do DGPS Survey
16	12.3.2013	Bogalay~Labutta	Over night at Labutta By car
17	13.3.2013	Route-3 (Labutta ~ Thingan-gyi village) (1 location) and Route-4 (Labutta ~ Labuttalot village & Labutta~ Ye Saing village) (2 locations)	Over night at Labutta By car Do DGPS Survey
18	14.3.2013	Labutta ~ Yangon	Arrived Yangon at 1030 AM

Refer to Figure-3.1.1 Location Map of Field Work at Ayeyarwady Region.

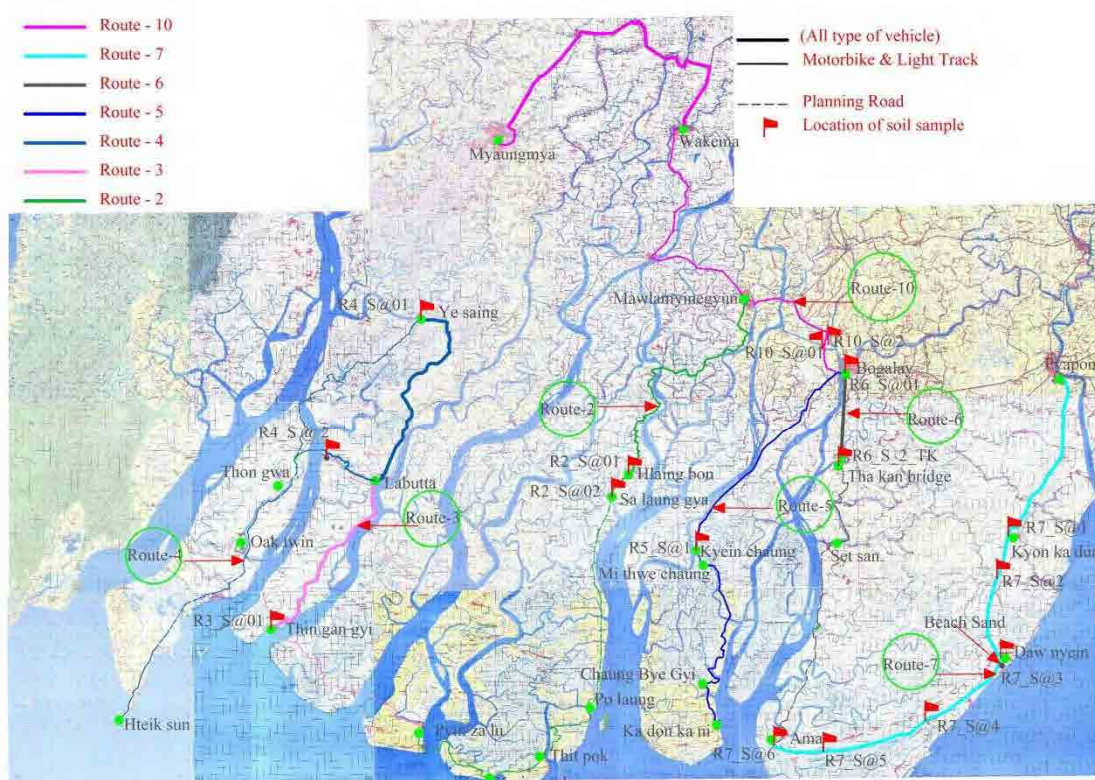
## CAPTER-3 FINDINGS ON FIELD SURVEY

### 3.1 General Information

The following survey team collected information and conducted field survey.

- a) U Yan NaingMyo – Senior Civil Engineer (Team Leader)
- b) U AungPhyo Pine- Civil Engineer (Member)

The location map (7 routes and 16 sampling locations) of field work is shown in Fig.3.1.1



1. Secondary roads are just for motorbike & light tr only on dry season because of birdges are under construction in some area & some are still not here bridges.
2. Planning roads area are not able to go by motorbike, because some are located at swamp, and the roads are just for village to village.
3. Abundant of channels and all the channels are needed to cross by boat. This cannot be hired readily in some area.

**Figure.3.1.1 Location Map of Field Work at Ayeyarwady Region**

The Candidate Sites for Pilot Project location is divided into seven sections and followings are result of field survey;

**(a) Route No.7 (Phyarpon-Kyunkadun-Dawnyein-Amar) (51-mile 5-furlong)**

- Route No.7, Phyarpon-Kyunkadun-Dawnyein-Amar road which 12-ft to 18-ft wide and total length is 51-miles and 5-furlongs long and connected Phyarpon township to Amar Township. This road is crucial for people living along the road and connected most of residential areas by road for social, economic, health and education activities in daily life.

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- It is also major transport route for transportation of regional products of Ayeyarwady Region such as rice, other agricultural and fishery products to Phyarpon and Yangon. Tools, equipment and machineries for agricultural sectors, kitchen utensil, foodstuffs and consumer goods are transported from Phyarpon to Amar by using this road.
- Public Works repair some area of Asphalt Road, upgrading some area of Earth Road to Road. Most of the Bridges on this road area are with RCC columns, timber floor and decking, and some a few of bridges with steel truss super structure. Load limit for bridge on this road is between 4 tons to 50 tons depends on type and size of the bridge. Vehicles using on this road are needed to check carefully before driving on this roads, because of no workshop and mechanic on this road and difficult for repair when something in out of order.

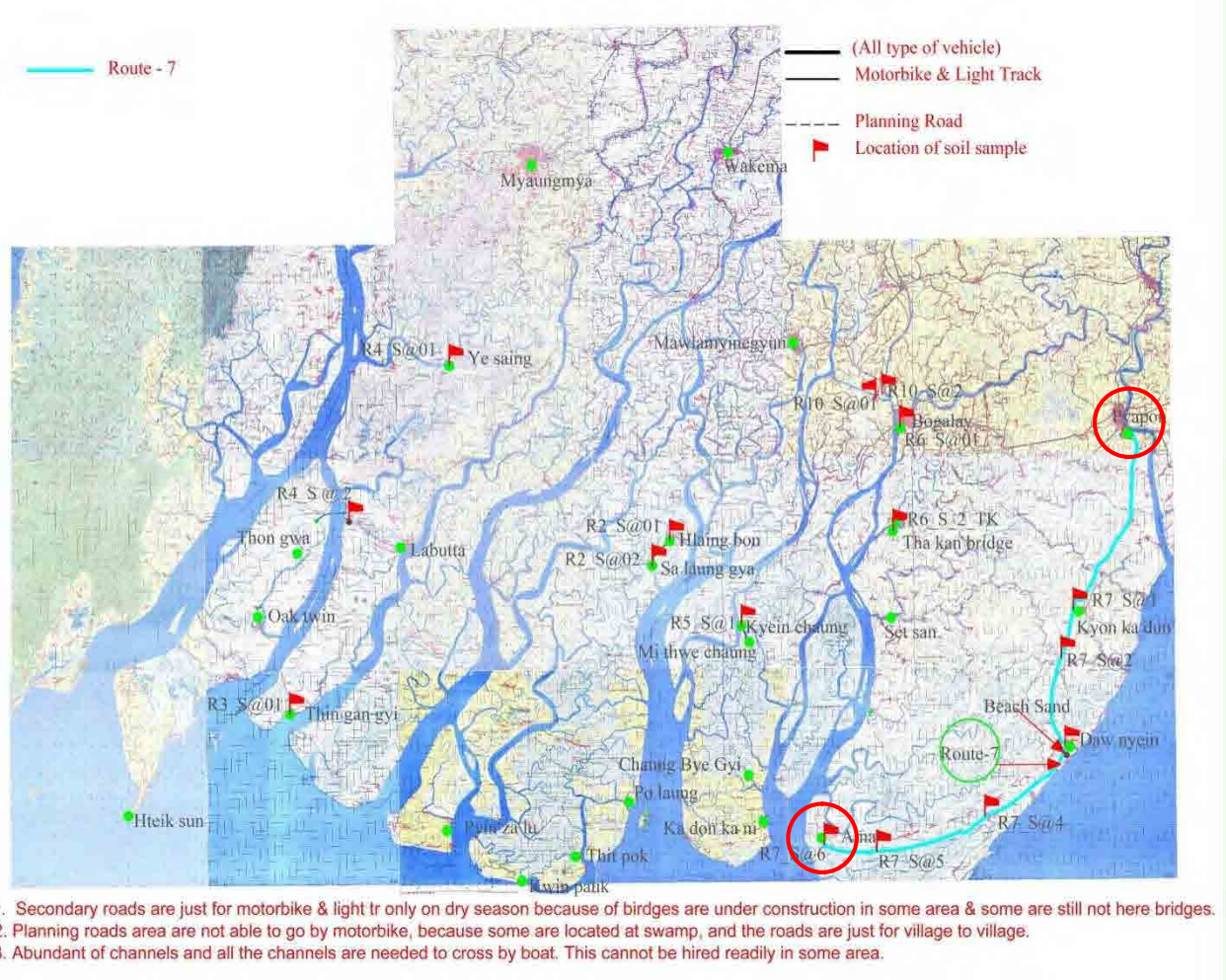
	
Road condition at Route No.7 (near Kyaonkadun village)	Road condition at Route No.7 (near Kyaonkadun village)
	
Road condition at Route No.7 (near Bawathit village)	Bridge condition at Route No.7 (near Seikma village)

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- Only 5 miles 3furlongs from Phyarpon is asphalt road, remaining sections are stone surfacing road, water bound macadam road and earth road. Bus, Lorries and Trucks are using it in summer but it is not usable in rainy season as stone sub-grade are laid on silty soil as sub-base layer which become weak in strength when mix with water in rainy season.
- Please see attached Photos for present condition of road in Annex-B.
- Please see attached Photos about interview of local residents in Annex-C.

**Route No.7 (Phyarpon-Kyunkadun-Dawnyein-Amar)**



**Figure.3.1.2 Map showing Alignment of Route No.7 (Phyarpon-Kyunkadun-Dawnyein-Amar)**

Traffic Intensity of Route No.7 (Phyarpon-Kyunkadun-Dawnyein-Amar)

- The table shown below is record of the number of vehicle at **Kyunkadun village junction** (Location-1).

Sr.	Type of Vehicle	Unit	No. of Vehicle		Total	Remark
			UP	DOWN		
1	Bus	No.	7	8	15	
2	Heavy truck, Tipper, Trailer	No.	-	-	-	
3	Light truck (less than 4 ton)	No.	-	-	-	
4	Other Vehicles (4WD,Pickup,Sedan)	No.	3	-	3	
5	Trollergy	No.	22	25	47	
6	Motorbike	No.	93	107	200	
UP= Phyarpon to Amar			DOWN=Amar to Phyarpon			
Data collected on 7.3.2013 at Kyunkadun village junction place.						

- The table shown below is record of the number of vehicle at **Ka-well-War-chaung village** (Location-2).

Sr.	Type of Vehicle	Unit	No. of Vehicle		Total	Remark
			UP	DOWN		
1	Bus	No.	4	4	15	
2	Heavy truck, Tipper, Trailer	No.	-	2	2	
3	Light truck (less than 4 ton)	No.	3	2	5	
4	Other Vehicles (4WD,Pickup,Sedan)	No.	2	-	2	
5	Trollergy	No.	5	5	10	
6	Motorbike	No.	117	183	300	
UP= Phyarpon to Amar			DOWN=Amar to Phyarpon			
Data collected on 7.3.2013 at Kawell-Warchaung village junction place.						

- The table shown below is record of the number of vehicle at **Dawnyein village junction**. (Location-3)

Sr.	Type of Vehicle	Unit	No. of Vehicle		Total	Remark
			UP	DOWN		
1	Bus	No.	6	6	12	
2	Heavy truck, Tipper, Trailer	No.	-	2	2	
3	Light truck (less than 4 ton)	No.	3	3	6	
4	Other Vehicles (4WD,Pickup,Sedan)	No.	2	-	2	
5	Trollergy	No.	5	5	10	
6	Motorbike	No.	110	105	215	
UP= Phyarpon to Amar			DOWN=Amar to Phyarpon			
Data collected on 7.3.2013 at Dawnyein village junction place.						

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- The table shown below is record of the number of vehicle at **Seikma village junction** (Location-4).

Sr.	Type of Vehicle	Unit	No. of Vehicle		Total	Remark
			UP	DOWN		
1	Bus	No.	5	5	10	
2	Heavy truck, Tipper, Trailer	No.	2	-	2	
3	Light truck (less than 4 ton)	No.	3	-	3	
4	Other Vehicles (4WD,Pickup,Sedan)	No.	3	-	3	
5	Trollergy	No.	5	5	10	
6	Motorbike	No.	60	40	100	
UP= Phyarpon to Amar			DOWN=Amar to Phyarpon			
Data collected on 7.3.2013 at Seikma village junction place.						

- The table shown below is record of the number of vehicle at **No.2 Bawathit village junction** (Location-5).

Sr.	Type of Vehicle	Unit	No. of Vehicle		Total	Remark
			UP	DOWN		
1	Bus	No.	2	2	4	
2	Heavy truck, Tipper, Trailer	No.	3	-	3	
3	Light truck (less than 4 ton)	No.	-	-	-	
4	Other Vehicles (4WD,Pickup,Sedan)	No.	1	-	1	
5	Trollergy	No.	3	2	5	
6	Motorbike	No.	92	108	200	
UP= Phyarpon to Amar			DOWN=Amar to Phyarpon			
Data collected on 7.3.2013 at No.2 Bawathit village junction place.						

- The table shown below is record of the number of vehicle at **Amar town** (Location-6).

Sr.	Type of Vehicle	Unit	No. of Vehicle		Total	Remark
			UP	DOWN		
1	Bus	No.	2	2	4	
2	Heavy truck, Tipper, Trailer	No.	3	-	3	
3	Light truck (less than 4 ton)	No.	-	-	-	
4	Other Vehicles (4WD,Pickup,Sedan)	No.	2	-	2	
5	Trollergy	No.	5	5	10	
6	Motorbike	No.	76	74	150	
UP= Phyarpon to Amar			DOWN=Amar to Phyarpon			
Data collected on 7.3.2013 at Amar town junction place.						

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**Interview at Road Survey Point**

**Date: 7.3.2013**

**Route : 7    Location : 1**

**Differential GPS Result**

1779200 (N)

46Q- 780970 (E)

EL of Road Surface: +3 m

Description	Results	Remarks
<b>1. General Information</b>		
a. Distance from Starting Point Starting Point: <b>Phyarpon</b>	24.73 km	
b. Name of Villages or Towns within 5 km	Kyaonkadun village	U Chit Aung
c. Number of residents within 5 km	8500	1700 households
d. Main Products to be transported by the road	Fishery products	
<b>2. Flood Level <u>from Road Surface</u></b>		
a. At the time of Cyclone Nargis	10 cm above cm down	
b. Usual Year	cm above 50 cm down	
<b>3. Traffic Volume (approximate daily traffic)</b>		
a. Bus	15	
b. Heavy Trucks, Tipper, Trailer	-	
c. Light Trucks (Less than 4 ton)	-	
d. Other Vehicles (4WD, Pickup, Sedan)	50	
e. Motorbike	200	
f. Bicycle	20	
g. Pedestrians	500	
<b>4. Road Condition at the Point</b>		
a. In Dry Season	Good, Fair, Bad How: Fair	



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b. In Rainy Season	Good, Fair, Bad How: Bad	
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**Interview at Road Survey Point**

**Date: 7.3.2013**

**Route : 7 Location : 2**

**Differential GPS Result**

1772149 (N)

46Q- 778556 (E)

EL of Road Surface: 0 m

Description	Results	Remarks
<b>1. General Information</b>		
a. Distance from Starting Point Starting Point: <b>Phyarpon</b>	32.18 km	
b. Name of Villages or Towns within 5 km	Wellgyi-Warchaung village	U San Myint
c. Number of residents within 5 km	985	220 households
d. Main Products to be transported by the road	Rice & Sea food	
<b>2. Flood Level from Road Surface</b>		
a. At the time of Cyclone Nargis	cm above 210 cm down	
b. Usual Year	cm above 60 cm down	
<b>3. Traffic Volume (approximate daily traffic)</b>		
a. Bus	8	
b. Heavy Trucks, Tipper, Trailer	2	
c. Light Trucks (Less than 4 ton)	5	
d. Other Vehicles (4WD, Pickup, Sedan)	2	
e. Motorbike	300	
f. Bicycle	2	
g. Pedestrians	500	
<b>4. Road Condition at the Point</b>		
a. In Dry Season	Good, Fair, Bad How: Fair	

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b. In Rainy Season	Good, Fair, Bad How: Bad	
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**Interview at Road Survey Point**

**Date: 7.3.2013**

**Route : 7 Location : 3**

**Differential GPS Result**

1760634 (N)

46P- 778189 (E)

EL of Road Surface: +2 m

Description	Results	Remarks
<b>1. General Information</b>		
a. Distance from Starting Point Starting Point: <b>Phyarpon</b>	45.05 km	
b. Name of Villages or Towns within 5 km	Daw Nyein village	U HlaHtay
c. Number of residents within 5 km	8000	1600 households
d. Main Products to be transported by the road	Rice & Sea food	
<b>2. Flood Level <u>from Road Surface</u></b>		
a. At the time of Cyclone Nargis	10 cm above cm down	
b. Usual Year	cm above 60 cm down	
<b>3. Traffic Volume (approximate daily traffic)</b>		
a. Bus	12	
b. Heavy Trucks, Tipper, Trailer	2	
c. Light Trucks (Less than 4 ton)	3	
d. Other Vehicles (4WD, Pickup, Sedan)	2	
e. Motorbike	200	
f. Bicycle	10	
g. Pedestrians	40	
<b>4. Road Condition at the Point</b>		
a. In Dry Season	Good, Fair, Bad How: Fair	

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b. In Rainy Season	Good, Fair, Bad How: Bad	
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**Interview at Road Survey Point**

**Date: 7.3.2013**

**Route : 7 Location : 4**

**Differential GPS Result**

1751019 (N)

46P- 767870 (E)

EL of Road Surface: -9 m

Description	Results	Remarks
<b>1. General Information</b>		
a. Distance from Starting Point Starting Point: <b>Phyarpon</b>	57.92 km	
b. Name of Villages or Towns within 5 km	Seikma village	U Win Maung
c. Number of residents within 5 km	1234	470 households
d. Main Products to be transported by the road	Rice & Sea food	
<b>2. Flood Level <u>from Road Surface</u></b>		
a. At the time of Cyclone Nargis	cm above 5 cm down	
b. Usual Year	cm above 60 cm down	
<b>3. Traffic Volume (approximate daily traffic)</b>		
a. Bus	10	
b. Heavy Trucks, Tipper, Trailer	2	
c. Light Trucks (Less than 4 ton)	3	
d. Other Vehicles (4WD, Pickup, Sedan)	3	
e. Motorbike	100	
f. Bicycle	100	
g. Pedestrians	100	

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<b>4. Road Condition at the Point</b>		
a. In Dry Season	Good, Fair, Bad How: Fair	
b. In Rainy Season	Good, Fair, Bad How: Bad	

**Interview at Road Survey Point**

**Date: 7.3.2013**

**Route : 7 Location : 5**

**Differential GPS Result**

1746815 (N)

46P- 754828 (E)

EL of Road Surface: +5 m

Description	Results	Remarks
<b>1. General Information</b>		
a. Distance from Starting Point Starting Point: <b>Phyarpon</b>	74.01 km	
b. Name of Villages or Towns within 5 km	No.2 Bawathit village	U Saw Htoo
c. Number of residents within 5 km	1261	251 households
d. Main Products to be transported by the road	Coconuts	
<b>2. Flood Level <u>from Road Surface</u></b>		
a. At the time of Cyclone Nargis	cm above 50 cm down	
b. Usual Year	cm above 40 cm down	
<b>3. Traffic Volume (approximate daily traffic)</b>		
a. Bus	2	
b. Heavy Trucks, Tipper, Trailer	3	
c. Light Trucks (Less than 4 ton)	-	
d. Other Vehicles (4WD, Pickup, Sedan)	1	
e. Motorbike	200	
f. Bicycle	40	

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g. Pedestrians	200	
<b>4. Road Condition at the Point</b>		
a. In Dry Season	Good, Fair, Bad How: Fair	
b. In Rainy Season	Good, Fair, Bad How: Bad	

**Interview at Road Survey Point**

**Date: 7.3.2013**

**Route : 7 Location : 6**

**Differential GPS Result**

1747076 (N)

46P- 746765 (E)

EL of Road Surface: +1 m

Description	Results	Remarks
<b>1. General Information</b>		
a. Distance from Starting Point Starting Point: <b>Phyarpon</b>	85.28 km	
b. Name of Villages or Towns within 5 km	Ama town	Daw Than Than Win
c. Number of residents within 5 km	6000	1100 households
d. Main Products to be transported by the road	Coconuts	
<b>2. Flood Level <u>from Road Surface</u></b>		
a. At the time of Cyclone Nargis	cm above 120 cm down	
b. Usual Year	cm above 120 cm down	
<b>3. Traffic Volume (approximate daily traffic)</b>		
a. Bus	2	
b. Heavy Trucks, Tipper, Trailer	3	
c. Light Trucks (Less than 4 ton)	-	
d. Other Vehicles (4WD, Pickup, Sedan)	2	
e. Motorbike	150	
f. Bicycle	150	
g. Pedestrians	100	

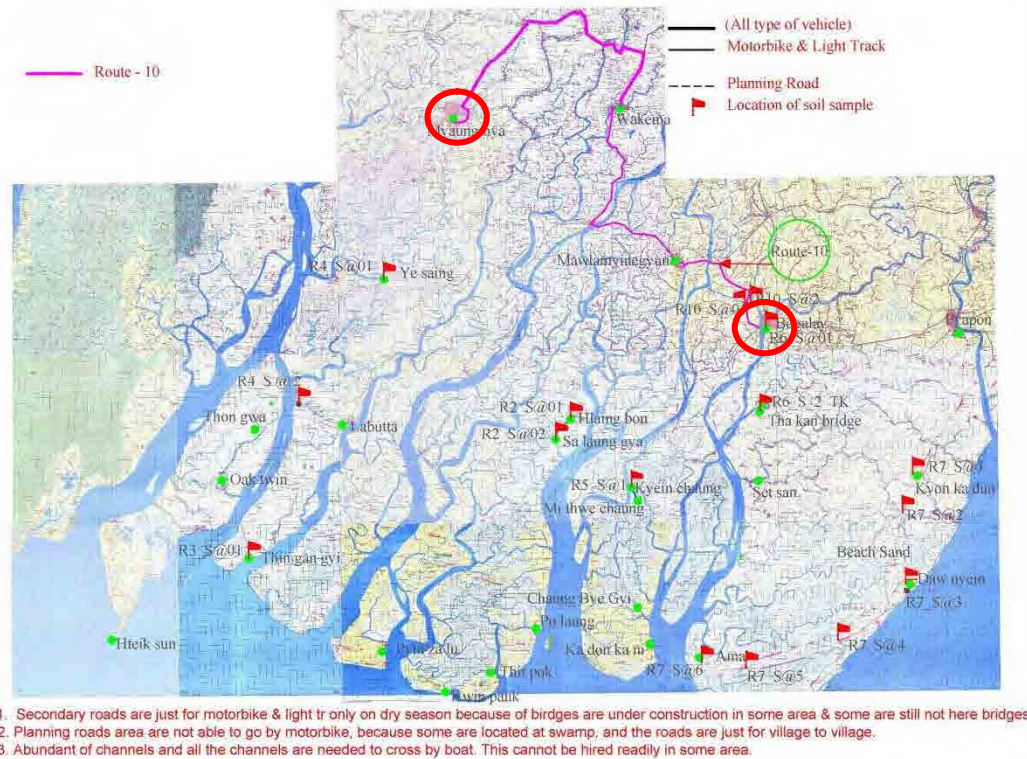
<b>4. Road Condition at the Point</b>		
a. In Dry Season	Good, Fair, Bad How: Fair	
b. In Rainy Season	Good, Fair, Bad How: Bad	

**(b) Route No.10 (Bogalay-Mawlamyine-gyum-Kyunmangae-Wakema-Myaungmya)**

**(66-mile 0-furlong)**

- Route No.10, Bogalay-Mawlamyine-gyum-Kyunmangae-Wakema-Myaungmya road which 12-ft to 18-ft wide and total length is 66-miles and 0-furlongs long and connected Bogalay township to Myaungmya township. This road is very useful for people living along the road and connected area for social, economic, health and education activities.
- This road is main crossing transport route for transportation of regional products of rice, other agricultural and fishery products between Bogalay and Myaungmya. It is also shortcut way between Bogalay to Myaungmya Township.

**Route No.10 (Bogalay-Mawlamyine-gyum-Kyunmangae-Wakema-Myaungmya)**



**Figure.3.1.3 Map showing Alignment of Route No.10 (Bogalay-Mawlamyine-gyum-Kyunmangae-Wakema-Myaungmya)**

- Route No.10, from Bogalay to near Yazudine bridge (13/1 mile mark point) is earth road by forming embankment with compacted silty soil. During rainy season, people living around the road used water way for transportation because the road become muddy and vehicle cannot drive and it take time to get Bogalay and Mawlamyine-gyum.
- On Route No.10, from near Yazudine bridge (13/1 mile mark point) to Mawlamyine-gyum, Kyun-ma-ngae town area, Wakema town area and Myaungmya town are tar road, and rest sections are stone surfacing road, macadam road and earth road.

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<p>Construction condition of Kywe Chan Yae Kyaw Bridge</p>	<p>Road condition at Route No.10 (near Kyuang-galay village)</p>
	
<p>Road condition at Route No.10 (near Kywe Chan Yae Kyaw Bridge)</p>	<p>Road condition at Route No.10 (near Ah-Hle-Chaung village)</p>

- Please see more in attached Photos for present condition of road in Annex-B.
- Please see attached Photos about interview of local residents in Annex-C.



Traffic Intensity of Route No.10 (Bogalay-Mawlamyine-gyum-Kyunmangae-Wakema-Myaungmya)

- The table shown below is record of the number of vehicle at **Tha-Bue-Gone village**. (Location-1).

Sr.	Type of Vehicle	Unit	No. of Vehicle		Total	Remark
			UP	DOWN		
1	Bus	No.	-	-	-	
2	Heavy truck, Tipper, Trailer	No.	-	-	-	
3	Light truck (less than 4 ton)	No.	-	-	-	
4	Other Vehicles (4WD,Pickup,Sedan)	No.	-	-	-	
5	Trollergy	No.	-	-	-	
6	Motorbike	No.	2	2	4	
UP= Bogalay to Myaungmya			DOWN=Myaungmya to Bogalay			
Data collected on 8.3.2013 at Tha-bue-gone village junction place.						

- The table shown below is record of the number of vehicle at **Kyuangalay village junction** (Location-2).

Sr.	Type of Vehicle	Unit	No. of Vehicle		Total	Remark
			UP	DOWN		
1	Bus	No.	-	-	-	
2	Heavy truck, Tipper, Trailer	No.	-	-	-	
3	Light truck (less than 4 ton)	No.	-	-	-	
4	Other Vehicles (4WD,Pickup,Sedan)	No.	-	-	-	
5	Trollergy	No.	-	-	-	
6	Motorbike	No.	2	2	4	
UP= Bogalay to Myaungmya			DOWN=Myaungmya to Bogalay			
Data collected on 8.3.2013 at Kyuangalay village junction place.						

- The table shown below is record of the number of vehicle at **Mawlamyine-gyum junction**.

Sr.	Type of Vehicle	Unit	No. of Vehicle		Total	Remark
			UP	DOWN		
1	Bus	No.	8	8	16	
2	Heavy truck, Tipper, Trailer	No.	15	20	35	
3	Light truck (less than 4 ton)	No.	25	39	64	
4	Other Vehicles (4WD,Pickup,Sedan)	No.	5	10	15	
5	Trollergy	No.	5	5	10	
6	Motorbike	No.	30	40	70	
UP= Bogalay to Myaungmya			DOWN=Myaungmya to Bogalay			
Data collected on 18.2.2013 at Mawlamyine-gyum junction place.						

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- The table shown below is record of the number of vehicle at **Myaungmya junction**.

Sr.	Type of Vehicle	Unit	No. of Vehicle		Total	Remark
			UP	DOWN		
1	Bus	No.	10	10	20	
2	Heavy truck, Tipper, Trailer	No.	35	40	75	
3	Light truck (less than 4 ton)	No.	45	50	95	
4	Other Vehicles (4WD,Pickup,Sedan)	No.	30	40	70	
5	Trollegery	No.	20	30	50	
6	Motorbike	No.	120	140	260	
	UP= Bogalay to Myaungmya			DOWN=Myaungmya to Bogalay		
	Data collected on 20.2.2013 at Myaungmya junction place.					

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**Interview at Road Survey Point**

**Date: 8.3.2013**

**Route : 10 Location : 1**

**Differential GPS Result**

1804945 (N)

46Q- 753352 (E)

EL of Road Surface: -2 m

Description	Results	Remarks
<b>1. General Information</b>		
a. Distance from Starting Point Starting Point: <b>Bogalay</b>	4.82 km	
b. Name of Villages or Towns within 5 km	Tha Bue Gone village	U Hla Win Maung
c. Number of residents within 5 km	5000	300 households
d. Main Products to be transported by the road	Rice	Mostly used waterway
<b>2. Flood Level <u>from Road Surface</u></b>		
a. At the time of Cyclone Nargis	90 cm above cm down	After Nargis constructed the road only
b. Usual Year	cm above 45 cm down	
<b>3. Traffic Volume (approximate daily traffic)</b>		
a. Bus	-	
b. Heavy Trucks, Tipper, Trailer	-	
c. Light Trucks (Less than 4 ton)	-	
d. Other Vehicles (4WD, Pickup, Sedan)	-	
e. Motorbike	2	
f. Bicycle	10	
g. Pedestrians	100	
<b>4. Road Condition at the Point</b>		
a. In Dry Season	Good, Fair, Bad How: Bad	
b. In Rainy Season	Good, Fair, Bad How: Bad	

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**Interview at Road Survey Point**

**Date: 8.3.2013**

**Route : 10 Location : 2**

**Differential GPS Result**

1805494(N)

46Q- 753621 (E)

EL of Road Surface: +6 m

Description	Results	Remarks
<b>1. General Information</b>		
a. Distance from Starting Point Starting Point: <b>Bogalay</b>	5.22 km	
b. Name of Villages or Towns within 5 km	Kyuangalay village	U SheinHtet &DawEiEiTun
c. Number of residents within 5 km	500	93 households
d. Main Products to be transported by the road	-	Only used waterway
<b>2. Flood Level <u>from Road Surface</u></b>		
a. At the time of Cyclone Nargis	120 cm above cm down	
b. Usual Year	cm above 60 cm down	
<b>3. Traffic Volume (approximate daily traffic)</b>		
a. Bus	-	
b. Heavy Trucks, Tipper, Trailer	-	
c. Light Trucks (Less than 4 ton)	-	
d. Other Vehicles (4WD, Pickup, Sedan)	-	
e. Motorbike	2	
f. Bicycle	-	
g. Pedestrians	60	
<b>4. Road Condition at the Point</b>		
a. In Dry Season	Good, Fair, Bad How: Bad	
b. In Rainy Season	Good, Fair, Bad How: Bad	

**(c) Route No.6 (Bogalay ~ Setsan ~ Htawpine ~ Amar) (38-miles 5-furlong)**

- Route No.6 (Bogalay ~ Setsan ~ Htawpine ~ Amar) total length of the road is 38-miles 5-furlong, where the road sections between Bogalay to Tha Kan Bridge (under construction condition) and Setsan to Htawpine is macadam road condition. So all type of vehicle can use and the remaining road section between Tha Kan Bridge to Setsan and Htawpine to Amar are earth road condition and road cannot used effectively due to uncompleted construction of bridge on some area. So, this earth road sections cannot go by car and motorbikes.
- Route No.6 (Bogalay ~ Setsan ~ Htawpine ~ Amar) is earth compacted road by forming embankment with nearby soil from paddy field. During rainy season, people living around the road used water way for transportation because the road become muddy and they cannot use vehicles and it take time to get Bogalay or Amar Township. And sometime they are facing difficulty when heavy rain and storm comes.

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Road Condition of Route No.6 (near Bogalay Bridge' left Bank)	Road Condition of Route No.6 (near Tha Kan Bridge' Right Bank)
	
Tha Kan Bridge construction condition Route No.6 (Yaetar-Phyan village)	Bogalay Bridge construction condition Route No.6 (Tarbaung village)
	
Road condition of Route No.6 (near Yaetar-phyan village)	Road condition of Route No.6 (between Yaetar-phyan to Setsan village)

### Route No.6 (Bogalay-Setsan-Htawpine-Amar)

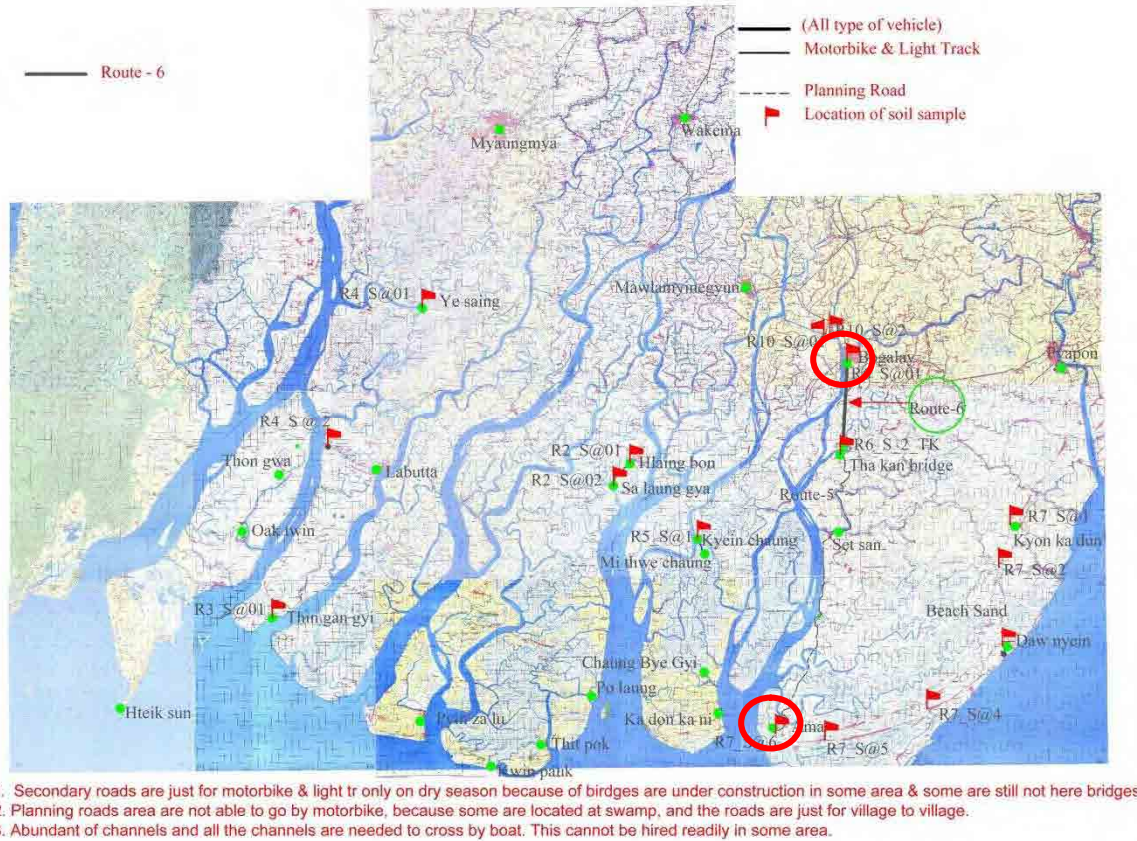


Figure.3.1.4 Map showing Alignment of Route No.6 (Bogalay-Setsan-Htawpine-Amar)

- Photo showing present condition of road are attached in Annex-B.
- Please see attached Photos about interview of local residents in Annex-C.

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**Traffic Intensity of Route No.6 (Bogalay-Setsan-Htawpine-Amar)**

- The table shown below is record of the number of vehicle at **Bogalay junction** (Location-1).

Sr.	Type of Vehicle	Unit	No. of Vehicle		Total	Remark
			UP	DOWN		
1	Bus	No.	-	-		
2	Heavy truck, Tipper, Trailer	No.	-	-		
3	Light truck (less than 4 ton)	No.	-	-		
4	Other Vehicles (4WD,Pickup,Sedan)	No.	2	-	2	
5	Trollergy	No.	-	-		
6	Motorbike	No.	60	40	100	
UP= Bogalay to Amar			DOWN=Amar to Bogalay			
Data collected on 16.2.2013 at Bogalay junction place.						

- The table shown below is record of the number of vehicle at **Tha Kan Bridge** (Location-2).

Sr.	Type of Vehicle	Unit	No. of Vehicle		Total	Remark
			UP	DOWN		
1	Bus	No.	-	-		
2	Heavy truck, Tipper, Trailer	No.	-	-		
3	Light truck (less than 4 ton)	No.	-	-		
4	Other Vehicles (4WD,Pickup,Sedan)	No.	2	-	2	
5	Trollergy	No.	-	-		
6	Motorbike	No.	60	40	100	
UP= Bogalay to Amar			DOWN=Amar to Bogalay			
Data collected on 16.2.2013 at Tha Kan Bridge place.						



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**Interview at Road Survey Point**

**Date: 8.3.2013**

**Route : 6 Location : 1**

**Differential GPS Result**

1800870 (N)

46Q- 756284 (E)

EL of Road Surface: +5 m

Description	Results	Remarks
<b>1. General Information</b>		
a. Distance from Starting Point Starting Point: <b>Bogalay</b>	1.4 km	
b. Name of Villages or Towns within 5 km	Phyar-Kyaung village	U MaungOo
c. Number of residents within 5 km	5000	1000 households
d. Main Products to be transported by the road	Rice	
<b>2. Flood Level <u>from Road Surface</u></b>		
a. At the time of Cyclone Nargis	210 cm above cm down	After Nargis constructed the road
b. Usual Year	cm above 60 cm down	
<b>3. Traffic Volume (approximate daily traffic)</b>		
a. Bus	-	
b. Heavy Trucks, Tipper, Trailer	-	
c. Light Trucks (Less than 4 ton)	-	
d. Other Vehicles (4WD, Pickup, Sedan)	-	
e. Motorbike	100	
f. Bicycle	50	
g. Pedestrians	200	
<b>4. Road Condition at the Point</b>		
a. In Dry Season	Good, Fair, Bad How: Fair	
b. In Rainy Season	Good, Fair, Bad How: Fair	

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**Interview at Road Survey Point**

**Date: 19.2.2013**

**Route : 6 Location : 2**

**Differential GPS Result**

1788463 (N)

46Q- 755248 (E)

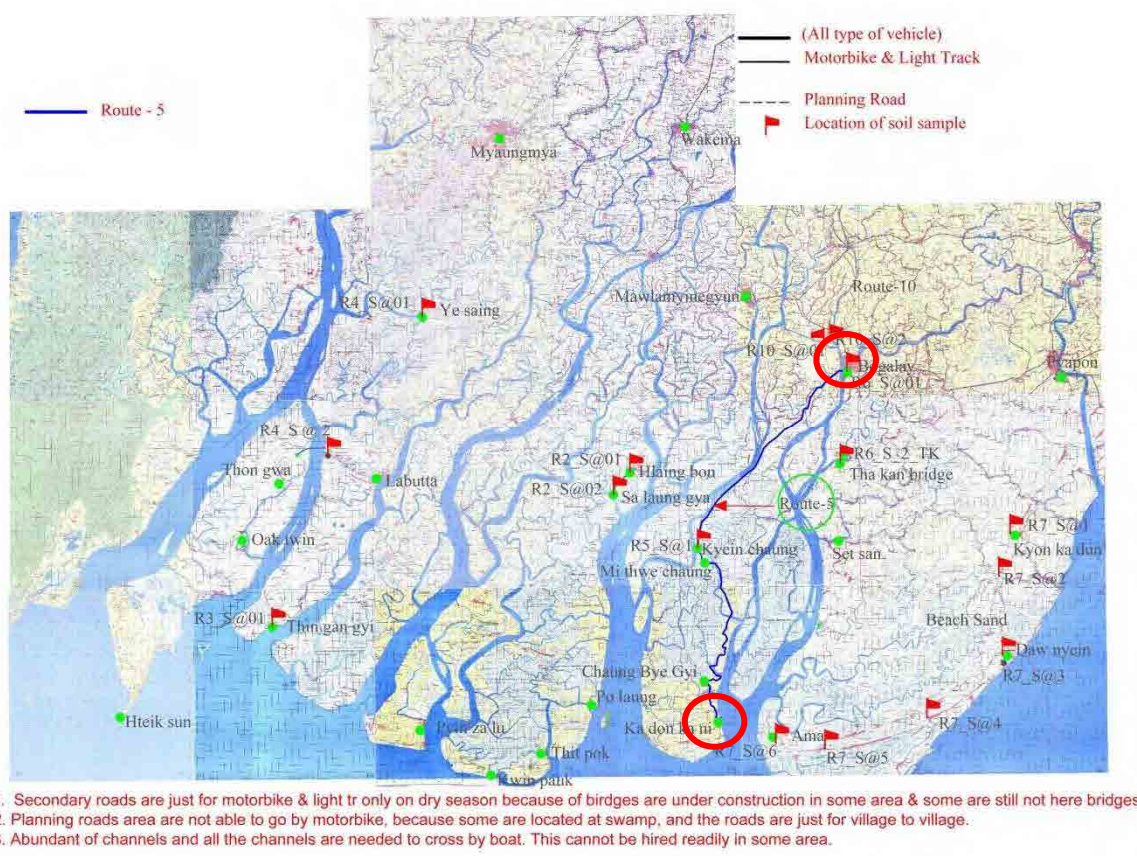
EL of Road Surface: +6 m

Description	Results	Remarks
<b>1. General Information</b>		
a. Distance from Starting Point Starting Point: <b>Bogalay</b>	14.48 km	
b. Name of Villages or Towns within 5 km	Yae TarPhyan village	DawMyintMyintSein
c. Number of residents within 5 km	500	100 households
d. Main Products to be transported by the road	-	Only used waterway.
<b>2. Flood Level <u>from Road Surface</u></b>		
a. At the time of Cyclone Nargis	210 cm above cm down	
b. Usual Year	cm above 70 cm down	
<b>3. Traffic Volume (approximate daily traffic)</b>		
a. Bus	-	
b. Heavy Trucks, Tipper, Trailer	-	
c. Light Trucks (Less than 4 ton)	-	
d. Other Vehicles (4WD, Pickup, Sedan)	-	
e. Motorbike	10	
f. Bicycle	10	
g. Pedestrians	50	
<b>4. Road Condition at the Point</b>		
a. In Dry Season	Good, Fair, Bad How: Bad	
b. In Rainy Season	Good, Fair, Bad How: Bad	

**(d) Route No.5 (Bogalay-Kyeinchaung-Katonkani) (41-miles 2-furlong)**

- Route No.5 (Bogalay-Kyeinchaung-Katonkani) road is 12-ft to 18-ft wide and total length 41-miles 2-furlong. This road is mostly earth compacted road by forming embankment with nearby soil from paddy field. During rainy season, main transport for the people living around is water way because the road become muddy and they cannot drive vehicles and it take time to get Bogalay and Katonkani and some time they are facing difficulty in rainy or during typhoons. This road is earth road and road cannot used effectively due to uncompleted construction of bridge on some area.

**Route No.5 (Bogalay-Kyeinchaung-Katonkani)**



**Figure.3.1.5Map showing Alignment of Route No.5 (Bogalay-Kyeinchaung-Katonkani)**

- On Route-5 (Bogalay-Kyeinchaung-Katonkani) the road sections between Tha-paung village to Kyeinchaung village is macadam road condition and Kyeinchaung village

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to Katonkani village is earth road condition. So, the road in rainy season so muddy and vehicle cannot use for transportation.

- Bridges on the road are made of RCC sub structure with bailey suspension. Although load limit of the bridges are from 4-tons to 40-tons.

	
Road Condition of Route No.5 (near Kyein-chaung-gyi village)	Bridge Condition of Route No.5 (near Bangalar village)
	
Road Condition of Route No.5 (near Zin-ywe-lay village)	Chaung-bye-gyi Bridge construction condition ( Route No.5)

Traffic Intensity of Route No.5 (Bogalay-Kyeinchaung-Katonkani)

- The table shown below is record of the number of vehicle at **Ma-Gu village**.

Sr.	Type of Vehicle	Unit	No. of Vehicle		Total	Remark
			UP	DOWN		
1	Bus	No.	1	1	2	
2	Heavy truck, Tipper, Trailer	No.	-	-	-	
3	Light truck (less than 4 ton)	No.	-	-	-	
4	Other Vehicles (4WD,Pickup,Sedan)	No.	-	-	-	
5	Trollergy	No.	2	2	4	
6	Motorbike	No.	18	22	40	
UP= Bogalay to Katonkani			DOWN=Katonkani to Bogalay			
Data collected on 16.2.2013 at Ma-Gu village place.						

- The table shown below is record of the number of vehicle at **Pay-chaung village**.

Sr.	Type of Vehicle	Unit	No. of Vehicle		Total	Remark
			UP	DOWN		
1	Bus	No.	1	1	2	
2	Heavy truck, Tipper, Trailer	No.	-	-	-	
3	Light truck (less than 4 ton)	No.	-	-	-	
4	Other Vehicles (4WD,Pickup,Sedan)	No.	1	1	2	
5	Trollergy	No.	2	3	5	
6	Motorbike	No.	14	16	30	
UP= Bogalay to Katonkani			DOWN=Katonkani to Bogalay			
Data collected on 16.2.2013 at Pay-chaung village place.						

- The table shown below is record of the number of vehicle at **Kyeinchaung village**.  
(Location-1)

Sr.	Type of Vehicle	Unit	No. of Vehicle		Total	Remark
			UP	DOWN		
1	Bus	No.	1	1	2	
2	Heavy truck, Tipper, Trailer	No.	1	1	2	
3	Light truck (less than 4 ton)	No.	-	-	-	
4	Other Vehicles (4WD,Pickup,Sedan)	No.	-	-	-	
5	Trollergy	No.	-	3	3	
6	Motorbike	No.	18	12	30	
UP= Bogalay to Katonkani			DOWN=Katonkani to Bogalay			
Data collected on 16.2.2013 at Kyeinchaung village place.						

- Please see more in attached photos for present condition of road in Annex-B.
- Please see attached Photos about interview of local residents in Annex-C.

**Interview at Road Survey Point**

**Date: 17.2.2013**

**Route : 5 Location : 1**

**Differential GPS Result**

1775600 (N)

46Q- 734411 (E)

EL of Road Surface: +10 m

Description	Results	Remarks
<b>1. General Information</b>		
a. Distance from Starting Point Starting Point: <b>Bogalay</b>	35.4 km	
b. Name of Villages or Towns within 5 km	Kyein-Chaung-Gyi village	U Naing Win
c. Number of residents within 5 km	1239	425 households
d. Main Products to be transported by the road	-	No used road, only used waterway
<b>2. Flood Level <u>from Road Surface</u></b>		
a. At the time of Cyclone Nargis	210 cm above cm down	
b. Usual Year	5 cm above cm down	
<b>3. Traffic Volume (approximate daily traffic)</b>		
a. Bus	1	
b. Heavy Trucks, Tipper, Trailer	-	
c. Light Trucks (Less than 4 ton)	-	
d. Other Vehicles (4WD, Pickup, Sedan)	1	
e. Motorbike	20	
f. Bicycle	10	
g. Pedestrians	50	
<b>4. Road Condition at the Point</b>		
a. In Dry Season	Good, Fair, Bad How: Bad	
b. In Rainy Season	Good, Fair, Bad How: Bad	

**(e) Route No.2 (Mawlamyine-gyum~Hlaingbone ~ Thitpoak ~ Kwinpoak ~ Pyinzalu)**

**(72-miles 3-furlong)**

- Route No.2 (Mawlamyine-gyum ~ Hlaingbone ~ Thitpoak ~ Kwinpoak ~ Pyinzalu) road is 12-ft to 18-ft wide and total length is 72-miles 3-furlong. This road is earth road by forming embankment with nearby compacted silty soil. Road cannot be used effectively due to not have bridges in some area. So, during rainy season, people living in the area used waterway for transportation and they only can use motorcycles in dry season for transportation.

	
<p>Road Condition of Route No.2 (near Ka-Nyin-chaung village)</p>	<p>Road Condition of Route No.2 (near Ah-Wa-Chaung village)</p>
	
<p>Bridge Condition of Route No.2 (near Sa-khan-chaung village)</p>	<p>Plan for Bridge construction of Route No.2 (at Sa LaungKya village)</p>





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Traffic Intensity of Route No.2 (Mawlamyine-gyum ~ Hlaingbone ~ Thitpoak ~ Kwinpoak ~ Pyinzalu)

- The table shown below is record of the number of vehicle at **Hlaingbone village**.

Sr.	Type of Vehicle	Unit	No. of Vehicle		Total	Remark
			UP	DOWN		
1	Bus	No.	-	-	-	
2	Heavy truck, Tipper, Trailer	No.	-	-	-	
3	Light truck (less than 4 ton)	No.	-	-	-	
4	Other Vehicles (4WD,Pickup,Sedan)	No.	-	-	-	
5	Trollergy	No.	-	-	-	
6	Motorbike	No.	6	5	11	
UP= Mawlamyine-gyum to Pyinzalu				DOWN=Pyinzalu to Mawlamyine-gyum		
Data collected on 20.2.2013 at Hlaingbone village place.						

- The table shown below is record of the number of vehicle at **Sa-Laung-Kya village** (Location-2).

Sr.	Type of Vehicle	Unit	No. of Vehicle		Total	Remark
			UP	DOWN		
1	Bus	No.	-	-	-	
2	Heavy truck, Tipper, Trailer	No.	-	-	-	
3	Light truck (less than 4 ton)	No.	-	-	-	
4	Other Vehicles (4WD,Pickup,Sedan)	No.	-	-	-	
5	Trollergy	No.	-	-	-	
6	Motorbike	No.	2	3	5	
UP= Mawlamyine-gyum to Pyinzalu				DOWN=Pyinzalu to Mawlamyine-gyum		
Data collected on 20.2.2013 at Sa Laung Kya village place.						

**Interview at Road Survey Point**

**Date: 20.2.2013**

**Route : 2 Location : 1**

**Differential GPS Result**

1786870 (N)

46Q- 725141 (E)

EL of Road Surface: +5m

Description	Results	Remarks
<b>1. General Information</b>		
a. Distance from Starting Point Starting Point: <b>Mawlamyine-gyun</b>	46.86 km	
b. Name of Villages or Towns within 5 km	Hlaing Bone village	U Zaw Min
c. Number of residents within 5 km	1000	200 households
d. Main Products to be transported by the road	-	No used road, only used waterway
<b>2. Flood Level <u>from Road Surface</u></b>		
a. At the time of Cyclone Nargis	210 cm above cm down	
b. Usual Year	cm above 60 cm down	
<b>3. Traffic Volume (approximate daily traffic)</b>		
a. Bus	-	
b. Heavy Trucks, Tipper, Trailer	-	
c. Light Trucks (Less than 4 ton)	-	
d. Other Vehicles (4WD, Pickup, Sedan)	-	
e. Motorbike	15	
f. Bicycle	20	
g. Pedestrians	100	
<b>4. Road Condition at the Point</b>		
a. In Dry Season	Good, Fair, Bad How: Fair	
b. In Rainy Season	Good, Fair, Bad How: Bad	

**Interview at Road Survey Point**

**Date: 20.2.2013**

**Route : 2 Location : 2**

**Differential GPS Result**

1782806 (N)

46Q- 721906 (E)

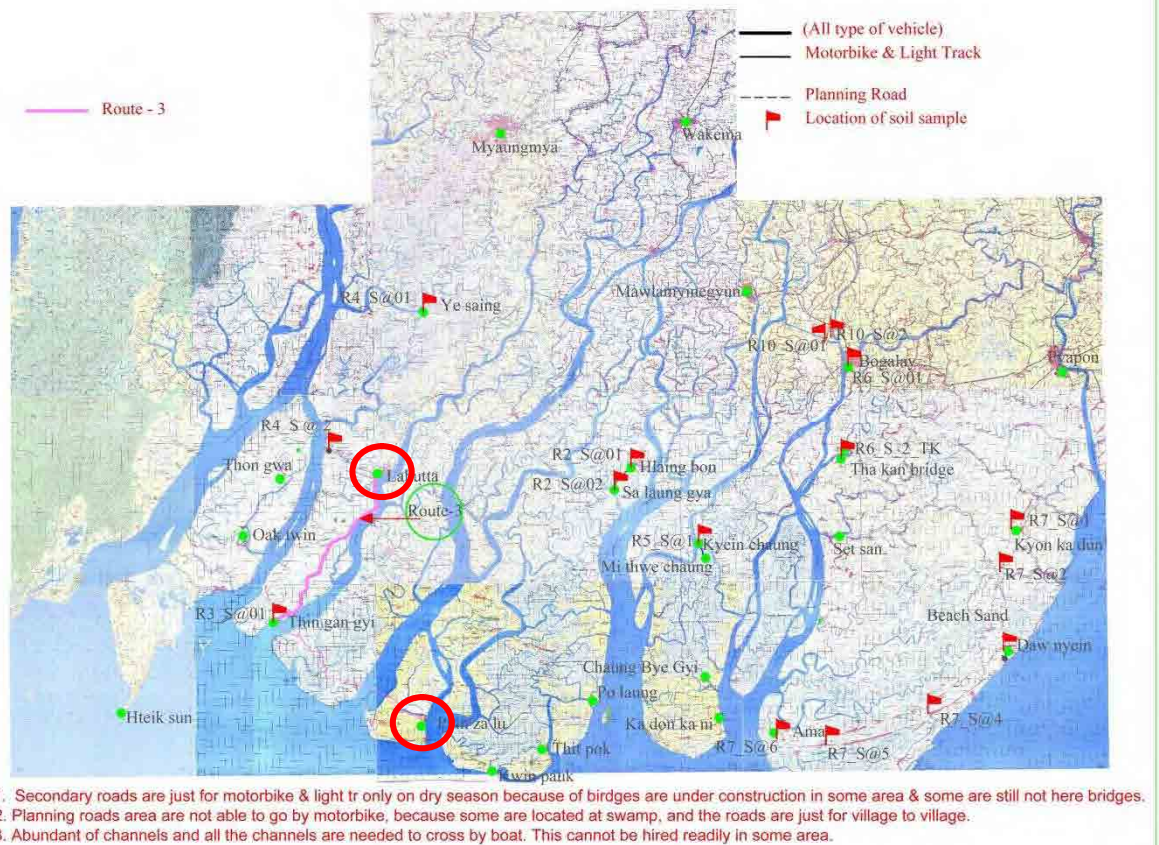
EL of Road Surface: +3 m

Description	Results	Remarks
<b>1. General Information</b>		
a. Distance from Starting Point Starting Point: <b>Mawlamyine-gyun</b>	53.29 km	
b. Name of Villages or Towns within 5 km	Sa Laung Kya Village	U Hla Win
c. Number of residents within 5 km	750	150 households
d. Main Products to be transported by the road	-	No used road, only used waterway
<b>2. Flood Level from Road Surface</b>		
a. At the time of Cyclone Nargis	240 cm above cm down	
b. Usual Year	cm above 60 cm down	
<b>3. Traffic Volume (approximate daily traffic)</b>		
a. Bus	-	
b. Heavy Trucks, Tipper, Trailer	-	
c. Light Trucks (Less than 4 ton)	-	
d. Other Vehicles (4WD, Pickup, Sedan)	-	
e. Motorbike	10	
f. Bicycle	-	
g. Pedestrians	-	
<b>4. Road Condition at the Point</b>		
a. In Dry Season	Good, Fair, Bad How: Bad	
b. In Rainy Season	Good, Fair, Bad How: Bad	

**(f) Route No.3 (Labutta ~ Thingan-gyi ~ Pyinzalu) (35-miles 2-furlong)**

- Route No.3 (Labutta ~ Thingan-gyi ~ Pyinzalu) road is 12-ft to 14-ft wide and total length is 35-miles 2-furlong. The road section between Labutta to Thingan-gyi village is (0 mile 4-furlong) asphalt road ,(4-miles 6-furlong) macadam road and good compacted earth road is (12 miles 0-furlong). And the rest section of road between Thingan-gyi village to Pyinzalu village (17-miles 6-furlong) is earth compacted road by forming embankment with nearby soil from embankment with nearby soil from paddy field. During rainy season, living around the road used waterway for transportation because muddy and vehicle cannot use and it take time to get Labutta and some time they are facing difficulty when heavy rain and storm comes.

**Route No.3 (Labutta ~ Thingan-gyi ~ Pyinzalu)**



**Figure.3.1.7 Map showing Alignment of Route No.3 (Labutta ~ Thingan-gyi ~ Pyinzalu)**

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- At Route No.3, the section of road between Thingan-gyi village to Pyinzalu village, the bridges mostly not yet started and construction of approaches on some bridges not yet completed. So, people living in this area used waterway for transportation.

	
Road Condition of Route No.3 (near Thingan-gyi village)	Bridge Condition of Route No.3 (near Tin-baung-kwin village)
	
Road Condition of Route No.3 (near Zin-ywe village)	Road condition of Route No.3 (near Lake-kwin village)

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**Traffic Intensity at Route No.3 (Labutta ~ Thingan-gyi ~ Pyinzalu)**

- The table shown below is record of the number of vehicle at **Zinywelay village**.

Sr.	Type of Vehicle	Unit	No. of Vehicle		Total	Remark
			UP	DOWN		
1	Bus	No.	2	2	4	
2	Heavy truck, Tipper, Trailer	No.	-	-	-	
3	Light truck (less than 4 ton)	No.	2	2	4	
4	Other Vehicles (4WD,Pickup,Sedan)	No.	2	2	4	
5	Trollery	No.	4	2	6	
6	Motorbike	No.	56	58	114	
UP= Labutta to Pyinzalu			DOWN=Pyinzalu to Labutta			
Data collected on 20.2.2013 at Zinywelay village place.						

- The table shown below is record of the number of vehicle at **Thingan-gyi village** (Location-1)

Sr.	Type of Vehicle	Unit	No. of Vehicle		Total	Remark
			UP	DOWN		
1	Bus	No.	3	3	6	
2	Heavy truck, Tipper, Trailer	No.	-	-	-	
3	Light truck (less than 4 ton)	No.	2	2	4	
4	Other Vehicles (4WD,Pickup,Sedan)	No.	2	2	4	
5	Trollergy	No.	2	3	5	
6	Motorbike	No.	48	52	100	
UP= Labutta to Pyinzalu			DOWN=Pyinzalu to Labutta			
Data collected on 20.2.2013 at Thingan-gyi village place.						

**Interview at Road Survey Point**

**Date: 21.2.2013**

**Route : 3 Location : 1**

**Differential GPS Result**

1765315 (N)





46P- 674301 (E)

EL of Road Surface: +5 m

Description	Results	Remarks
<b>1. General Information</b>		
a. Distance from Starting Point Starting Point: <b>Bogalay</b>	28.15 km	
b. Name of Villages or Towns within 5 km	Thin-Kan-Gyi village	U Zaw Lin
c. Number of residents within 5 km	120	30 households
d. Main Products to be transported by the road	Rice and fishery products	
<b>2. Flood Level <u>from Road Surface</u></b>		
a. At the time of Cyclone Nargis	90 cm above cm down	
b. Usual Year	cm above 70 cm down	
<b>3. Traffic Volume (approximate daily traffic)</b>		
a. Bus	3	
b. Heavy Trucks, Tipper, Trailer	-	
c. Light Trucks (Less than 4 ton)	2	
d. Other Vehicles (4WD, Pickup, Sedan)	2	
e. Motorbike	50	
f. Bicycle	4	
g. Pedestrians	50	
<b>4. Road Condition at the Point</b>		
a. In Dry Season	Good, Fair, Bad How: Fair	
b. In Rainy Season	Good, Fair, Bad How: Fair	

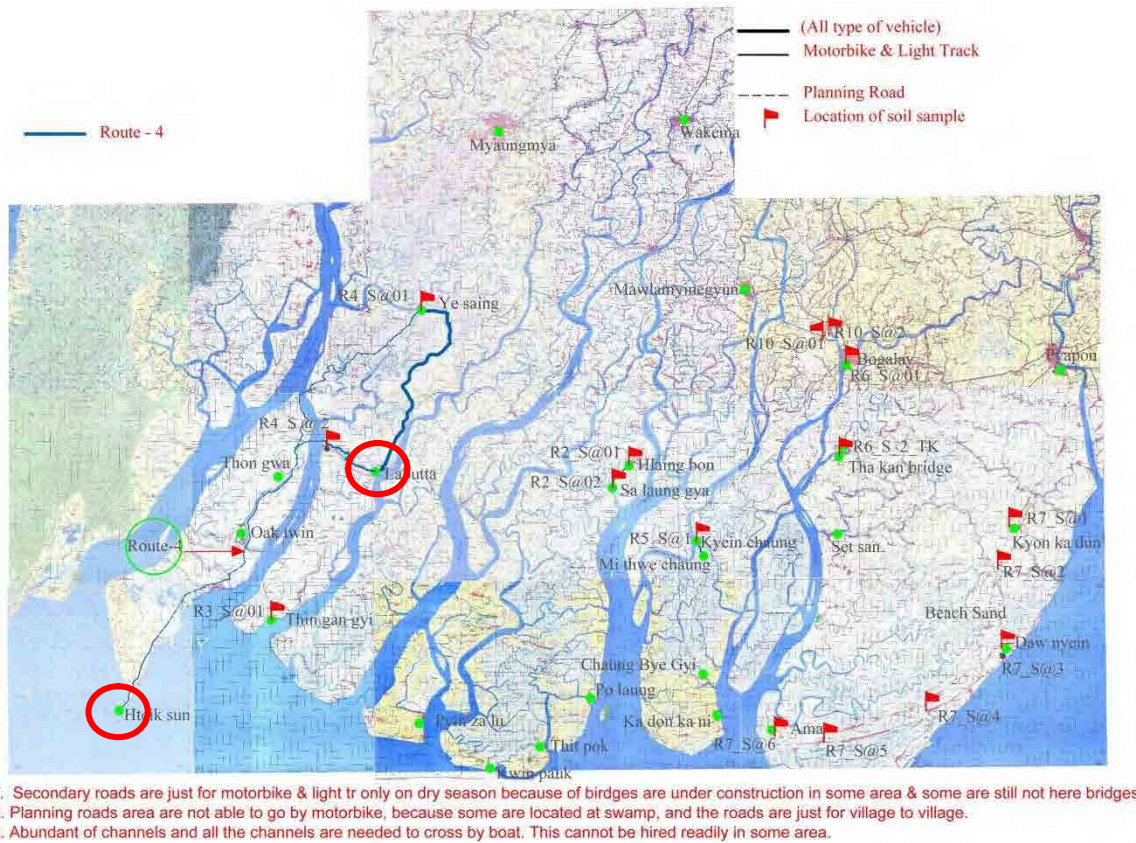
**(g) Route No. 4 (Labutta ~ Thongwa ~ Oaktwin ~ Hteiksun) (56-miles 0-furlong)**

- Route No.4 (Labutta ~ Thongwa ~ Oaktwin ~ Hteiksun) road is 12-ft to 14-ft wide and total length is 56-miles 0-furlong. The road section between Apyin-Yae-Saing village to Labuttalot village is (8 mile 0-furlong) asphalt road , (0-miles 3-furlong) macadam road. And the rest section of road between Labuttalotvillage to Hteiksun village (47-miles 5-furlong) is earth compacted road by forming embankment with nearby soil from paddy field. During rainy season, living around the road used waterway for transportation because road is muddy and it take time to get Labutta and some time they are facing difficulty when heavy rain and storm comes.
- At Route No.4, the section of raod between Apyin-Yae-Saing village to Yae-baw-galay village,Labuttalot (southern)village to Oaktwin village, the bridges mostly not yet started and construction of approaches on some bridges not yet completed. So, people living in this area used waterway for transportation.

	
<p>Road Condition of Route No.4 (near Apyin-Yae-Saing village)</p>	<p>Road Condition of Route No.4 (near Labutta town)</p>
	
<p>Road Condition of Route No.4 (near Labuttalot south village)</p>	<p>Road condition of Route No.4 (near Phyar-gyi-gone village)</p>



**Route No.4 (Labutta ~ Thongwa ~ Oaktwin ~ Hteiksun)**



**Figure.3.1.8 Map showing Alignment of Route No.4 (Labutta ~ Thongwa ~ Oaktwin ~ Hteiksun)**

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## Traffic Intensity of Route No.4 (Labutta ~ Thongwa ~ Oaktwin ~ Hteiksun)

- The table shown below is record of the number of vehicle at **Apyin-Yae-Saing village junction place** (Location-1).

Sr.	Type of Vehicle	Unit	No. of Vehicle		Total	Remark
			UP	DOWN		
1	Bus	No.	-	-		
2	Heavy truck, Tipper, Trailer	No.	-	-		
3	Light truck (less than 4 ton)	No.	-	-		
4	Other Vehicles (4WD,Pickup,Sedan)	No.	-	-		
5	Trollery	No.	-	-		
6	Motorbike	No.	8	12	20	
UP= Labutta to Hteiksun				DOWN=Hteiksun to Labutta		
Data collected on 22.2.2013 at Apyin-Yae-Saing villagejunction place.						

- The table shown below is record of the number of vehicle at **Labuttalot village junction place**. (Location-2)

Sr.	Type of Vehicle	Unit	No. of Vehicle		Total	Remark
			UP	DOWN		
1	Bus	No.	-	-		
2	Heavy truck, Tipper, Trailer	No.	-	-		
3	Light truck (less than 4 ton)	No.	-	-		
4	Other Vehicles (4WD,Pickup,Sedan)	No.	-	-		
5	Trollery	No.	2	2	4	
6	Motorbike	No.	6	5	11	
UP= Labutta to Hteiksun				DOWN=Hteiksun to Labutta		
Data collected on 5.3.2013 at Labuttalot village junction place.						

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**Interview at Road Survey Point**

**Date: 22.2.2013**

**Route : 4 Location : 1**

**Differential GPS Result**

1808618 (N)

46Q- 694281 (E)

EL of Road Surface: -1 m

Description	Results	Remarks
<b>1. General Information</b>		
a. Distance from Starting Point Starting Point: <b>Labutta</b>	29.96 km	
b. Name of Villages or Towns within 5 km	Apyin-Ye-Sai village	U Pho HlaHtoo
c. Number of residents within 5 km	260	67 households
d. Main Products to be transported by the road	-	No used road, only used waterway
<b>2. Flood Level <u>from Road Surface</u></b>		
a. At the time of Cyclone Nargis	cm above 600 cm down	
b. Usual Year	cm above 600 cm down	
<b>3. Traffic Volume (approximate daily traffic)</b>		
a. Bus	-	
b. Heavy Trucks, Tipper, Trailer	-	
c. Light Trucks (Less than 4 ton)	-	
d. Other Vehicles (4WD, Pickup, Sedan)	-	
e. Motorbike	20	
f. Bicycle	2	
g. Pedestrians	100	
<b>4. Road Condition at the Point</b>		
a. In Dry Season	Good, Fair, Bad How: Bad	
b. In Rainy Season	Good, Fair, Bad How: Bad	

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**Interview at Road Survey Point**

**Date: 05.03.2013**

**Route : 4 Location : 2**

**Differential GPS Result**

1789831 (N)

46Q- 679621 (E)

EL of Road Surface: +5 m

Description	Results	Remarks
<b>1. General Information</b>		
a. Distance from Starting Point Starting Point: <b>Labutta</b>	7.84 km	
b. Name of Villages or Towns within 5 km	Labuttalot village	U OhnShwe
c. Number of residents within 5 km	3500	700 households
d. Main Products to be transported by the road	Rice	
<b>2. Flood Level <u>from Road Surface</u></b>		
a. At the time of Cyclone Nargis	150 cm above cm down	
b. Usual Year	cm above 60 cm down	
<b>3. Traffic Volume (approximate daily traffic)</b>		
a. Bus	-	
b. Heavy Trucks, Tipper, Trailer	-	
c. Light Trucks (Less than 4 ton)	-	
d. Other Vehicles (4WD, Pickup, Sedan)	2	
e. Motorbike	6	
f. Bicycle	-	
g. Pedestrians	50	
<b>4. Road Condition at the Point</b>		
a. In Dry Season	Good, Fair, Bad How: Bad	
b. In Rainy Season	Good, Fair, Bad How: Bad	



### 3.2.6. Coordinates of Primary and Secondary Control Stations

#### Primary Bench Mark:

##### Bench Mark No.1034 at Bogale

Lat: 16deg 17' 53.21826"

Long: 95deg 24' 08.45744"

Elevation: 1.741m(MSL)

##### Bench Mark No.1036 at Ama

Lat: 16deg 47' 27.20943"

Long: 95deg 17' 54.60286"

Elevation: 2.298m(MSL)

##### Bench Mark No.0234 at Labutta

Lat: 16deg 09' 05.51840"

Long: 94deg 45' 25.33915"

Elevation: 0.780m(MSL)

Secondary Control Stations in every Project Site:

### 3.2.7. Result of DGPS

The Total of **16 Secondary Control Stations** survey was successfully completed on 14<sup>th</sup> March 2013.

All survey instruments, observation methods, monuments construction and markings, survey parameters were used according to the contract and the survey results were good. It took about 8 days to complete the survey works, data processing .DGPS Control survey was started on the 7<sup>th</sup> March and completed on the 14<sup>th</sup> March 2013.

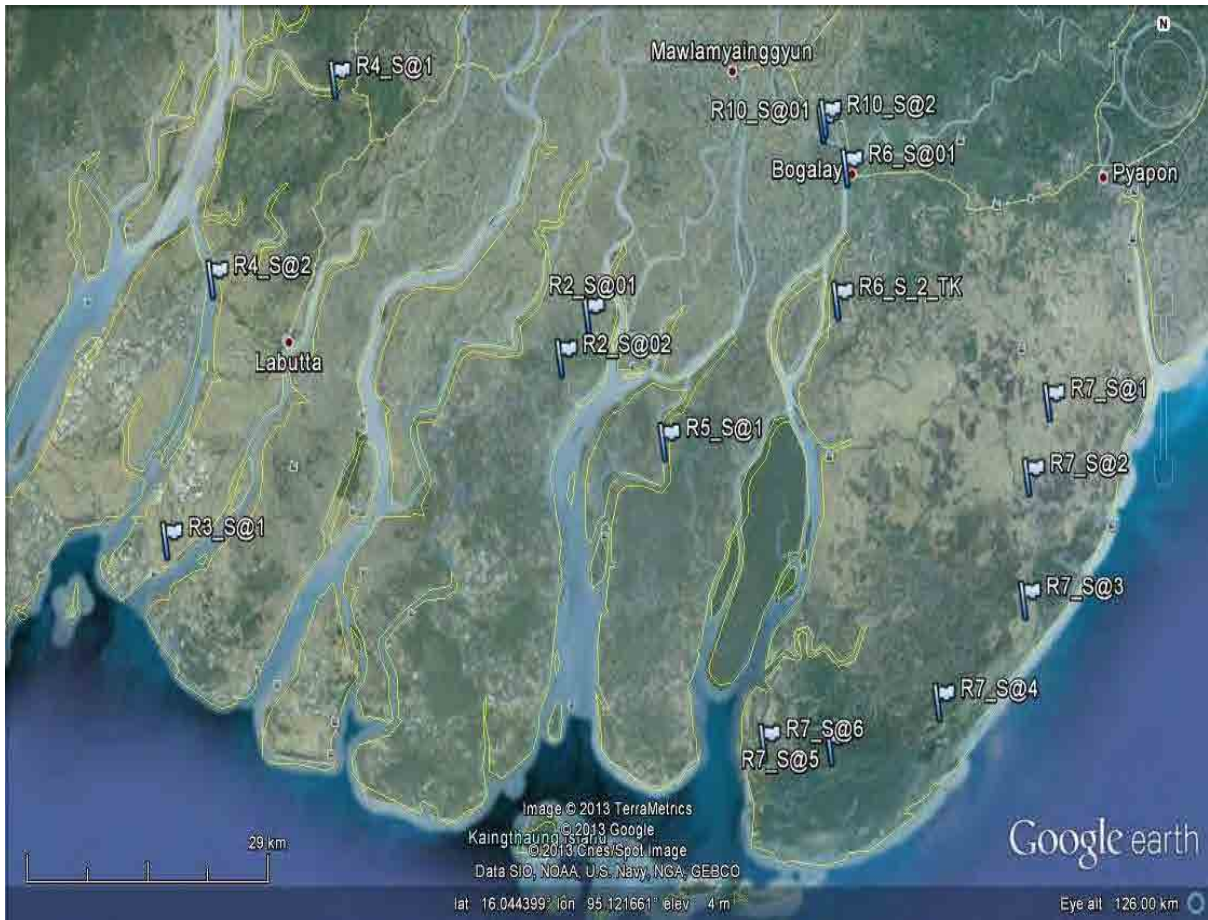
The Survey was done by 6 experienced surveyors,3 DGPS Instruments and1 Auto Level Instrument.

Detail of Photo records for DGPS Survey activities, please in annex-D.

Detail GPS Observation Report please see in annex-F.

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**Figure:3.2.6 GPS Map for (16) Locations of Soil sampling points at Ayeyarwady Region**

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**Table-3.2.6(a) Table of Secondary Control Stations DGPS Data record**

<b>Name</b>	<b>WGS84 Latitude</b>	<b>WGS84 Longitude</b>	<b>WGS84 Ell.Height (m)</b>	<b>MMD-2000 Latitude</b>	<b>MMD-2000 Longitude</b>	<b>Elevation (Datum) (m)</b>	<b>MMD-2000 UTM Grid Easting (m)</b>	<b>MMD-2000 UTM Grid Northing (m)</b>	<b>Elevation (MSL) (m)</b>
GCP-0234	16°09'05.51840N	94°45'25.33915E	-45.124	16°09'00.57196N	94°45'35.80424E	-7.282	688157.453	1786205.95	0.78
GCP-1036	15°47'27.20943N	95°17'54.60286E	-42.374	15°47'22.13471N	95°18'05.29063E	-0.705	746517.101	1746857.082	2.298
GCP-1034	16°17'53.21826N	95°24'08.45744E	-42.818	16°17'48.28103N	95°24'19.21860E	-1.956	756996.471	1803129.830	1.741
R2-S1	16°09'06.21792N	95°06'19.69318E	-43.607	16°09'01.25431N	95°06'30.31400E	-3.936	725426.154	1786577.016	0.972
R2-S2	16°06'55.20317N	95°04'29.43885E	-44.022	16°06'50.23079N	95°04'40.04407E	-4.416	722190.599	1782515.888	0.554
R7-S1	16°04'36.24573N	95°37'34.86789E	-43.447	16°04'31.23481N	95°37'45.71671E	-0.789	781259.909	1778914.783	1.125
R7-S2	16°00'48.00668N	95°36'10.43520E	-42.261	16°00'42.97917N	95°36'21.27016E	0.440	778837.511	1771863.937	2.312
R7-S3	15°54'33.42067N	95°35'53.66523E	-42.987	15°54'28.36423N	95°36'04.49253E	-0.029	778482.446	1760338.047	1.685
R7-S4	15°49'25.03630N	95°30'02.90224E	-42.846	15°49'19.96075N	95°30'13.68169E	-0.181	768157.554	1750727.593	1.826
R7-S5	15°47'13.31523N	95°22'43.16318E	-42.535	15°47'08.23548N	95°22'53.88639E	-0.426	755112.867	1746525.327	2.140
R7-S6	15°47'24.67673N	95°18'12.55847E	-42.683	15°47'19.60157N	95°18'23.24842E	-0.985	747052.511	1746785.054	1.992
R10-S1	16°18'43.96426N	95°22'15.86845E	-43.121	16°18'39.03259N	95°22'26.61643E	-2.463	753634.762	1804651.127	1.445
R10-S2	16°19'01.82728N	95°22'25.17744E	-42.967	16°18'56.89689N	95°22'35.92685E	-2.309	753904.794	1805203.621	1.601



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<b>Name</b>	<b>WGS84 Latitude</b>	<b>WGS84 Longitude</b>	<b>WGS84 Ell.Height (m)</b>	<b>MMD-2000 Latitude</b>	<b>MMD-2000 Longitude</b>	<b>Elevation (Datum) (m)</b>	<b>MMD-2000 UTM Grid Easting (m)</b>	<b>MMD-2000 UTM Grid Northing (m)</b>	<b>Elevation (MSL) (m)</b>
R6-S1	16°16'30.42639N	95°23'53.32898E	-42.278	16°16'25.48288N	95°24'04.08700E	-1.377	756577.093	1800578.715	2.285
R6-S2	16°09'47.36509N	95°23'13.33184E	-43.01	16°09'42.39057N	95°23'24.07884E	-1.871	755533.446	1788170.916	1.557
R5-S1	16°02'40.34217N	95°11'27.27851E	-42.911	16°02'35.35159N	95°11'37.93783E	-2.500	734691.893	1774808.432	1.638
R3-S1	15°57'40.00784N	94°37'42.93824E	-45.031	15°57'35.01371N	94°37'53.33592E	-7.349	674585.996	1765022.595	0.872
R4-S2	16°10'56.21301N	94°40'48.46133E	-44.509	16°10'51.27907N	94°40'58.89360E	-7.149	679904.008	1789539.81	1.395
R4-S1	16°21'03.35740N	94°49'08.03924E	-44.349	16°20'58.46452N	94°49'18.54259E	-6.71	694577.683	1808329.745	1.555

**Table: 3.2.6 (b) The Level Different between existing Road center and Soil sampling point.**

<b>R2-S1</b>	Center of Embankment Elevation is (1.857 m) Higher than(R2-S1) Soil Sample Elevation
<b>R2-S2</b>	Center of Embankment Elevation is (1.857 m) Higher than (R2-S2)Soil Sample Elevation
<b>R3-S1</b>	Center of Embankment Elevation is (1.507 m) Higher than (R3-S1)Soil Sample Elevation
<b>R4-S1</b>	Center of Embankment Elevation is (1.402 m) Higher than (R4-S1)Soil Sample Elevation
<b>R4-S2</b>	Center of Embankment Elevation is (2.002 m) Higher than (R4-S2)Soil Sample Elevation
<b>R5-S1</b>	Center of Embankment Elevation is (1.282 m) Higher than (R5-S1)Soil Sample Elevation
<b>R6-S1</b>	Center of Embankment Elevation is (1.920 m) Higher than (R6-S1)Soil Sample Elevation
<b>R6-S2</b>	Center of Embankment Elevation is (1.798 m) Higher than (R6-S2)Soil Sample Elevation
<b>R7-S1</b>	Center of Embankment Elevation is (1.374 m) Higher than (R7-S1)Soil Sample Elevation
<b>R7-S2</b>	Center of Embankment Elevation is (0.713 m) Higher than (R7-S2)Soil Sample Elevation
<b>R7-S3</b>	Center of Embankment Elevation is (2.236 m) Higher than (R7-S3)Soil Sample Elevation
<b>R7-S4</b>	Center of Embankment Elevation is (1.305 m) Higher than (R7-S4)Soil Sample Elevation
<b>R7-S5</b>	Center of Embankment Elevation is (0.989 m) Higher than (R7-S5)Soil Sample Elevation
<b>R7-S6</b>	Center of Embankment Elevation is (1.475 m) Higher than (R7-S6)Soil Sample Elevation
<b>R10-S1</b>	Center of Embankment Elevation is (1.687 m) Higher than (R10-S1)Soil Sample Elevation
<b>R10-S2</b>	Center of Embankment Elevation is (1.178 m) Higher than (R10-S2)Soil Sample Elevation

### 3.3 Soil Sampling

Soil sampling was carried out at 16 points. Plan map of soil samples is shown in Figure-3.3.1. The weight of soil sample for each sampling locations and date is shown in Table-3.3.1 to Table-3.3.4.

**Table-3.3.1 Soil Samples sent to Public Works Laboratory (19.2.2013)**

No.	Route	Location No.	Sample Type	Weight (kg)	Sampled Date	Date of Arrival	Remark
1	R-6	1	Soil Sample	36.0	16.2.2013	18.2.2013	2 bags
2		2	Soil Sample	37.0	16.2.2013	18.2.2013	3 bags
3		1	Sample for Water Content	0.8	16.2.2013	18.2.2013	
4		2	Sample for Water Content	0.7	16.2.2013	18.2.2013	
5		1	Soil Sample	19.0	16.2.2013	18.2.2013	
6		1	Soil Sample	16.0	16.2.2013	18.2.2013	
7		1	Sample for Water Content	0.6	16.2.2013	18.2.2013	
8	R-7	1	Soil Sample	30.0	16.2.2013	18.2.2013	3 bags
9		2	Soil Sample	22.0	16.2.2013	18.2.2013	3 bags
10		3	Soil Sample	44.0	16.2.2013	18.2.2013	3 bags
11		4	Soil Sample	46.0	16.2.2013	18.2.2013	3 bags
12		5	Soil Sample	38.0	16.2.2013	18.2.2013	2 bags
13		6	Soil Sample	95.0	16.2.2013	18.2.2013	4 bags
14		2	Sample for Water Content	0.7	16.2.2013	18.2.2013	
15		3	Sample for Water Content	0.9	16.2.2013	18.2.2013	
16		4	Sample for Water Content	0.6	16.2.2013	18.2.2013	
17		5	Sample for Water Content	0.6	16.2.2013	18.2.2013	
18		6	Sample for Water Content	0.7	16.2.2013	18.2.2013	
19	R-10	1	Soil Sample	24.0	16.2.2013	18.2.2013	3 bags, Right Bank
20		2	Soil Sample	36.0	16.2.2013	18.2.2013	3 bags, Left Bank
21		1	Sample for Water Content	0.6	16.2.2013	18.2.2013	Right Bank
22		2	Sample for Water Content	0.6	16.2.2013	18.2.2013	Left Bank

**Table-3.3.2 Soil Samples sent to Public Works Laboratory (25.2.2013)**

No.	Route	Location No.	Sample Type	Weight (kg)	Sampled Date	Date of Arrival	Remark
1	R-5	1	Soil Sample	54.0	16.2.2013	18.2.2013	3 bags
2		1	Sample for Water Content	0.7	16.2.2013	18.2.2013	
3	R-6	2	Soil Sample	61.0	16.2.2013	18.2.2013	3 bags
4		2	Sample for Water Content	0.6	16.2.2013	18.2.2013	
5	R-2	1	Soil Sample	32.0	16.2.2013	18.2.2013	2 bags
6		1	Sample for Water Content	-	16.2.2013	18.2.2013	
7		2	Soil Sample	39.5	16.2.2013	18.2.2013	3 bags
8		2	Sample for Water Content	0.6	16.2.2013	18.2.2013	
9	R-3	2	Soil Sample	51.5	16.2.2013	18.2.2013	3 bags
10		3	Sample for Water Content	0.6	16.2.2013	18.2.2013	
11	R-4	4	Soil Sample	41.0	16.2.2013	18.2.2013	3 bags
12		5	Sample for Water Content	0.6	16.2.2013	18.2.2013	

Remark: The samples for moisture content and another a bag from R-2\_1 will be sent at 1.3.2013.

**Table-3.3.2 Soil Samples sent to Public Works Laboratory (28.2.2013)**

No.	Route	Location No.	Sample Type	Weight (kg)	Sampled Date	Date of Arrival	Remark
1	R-2	1	Soil Sample	17.0	20.2.2013	28.2.2013	1 bags
2		1	Sample for Water Content	0.7	20.2.2013	28.2.2013	

**Table-3.3.2 Soil Samples sent to Public Works Laboratory (11.3.2013)**

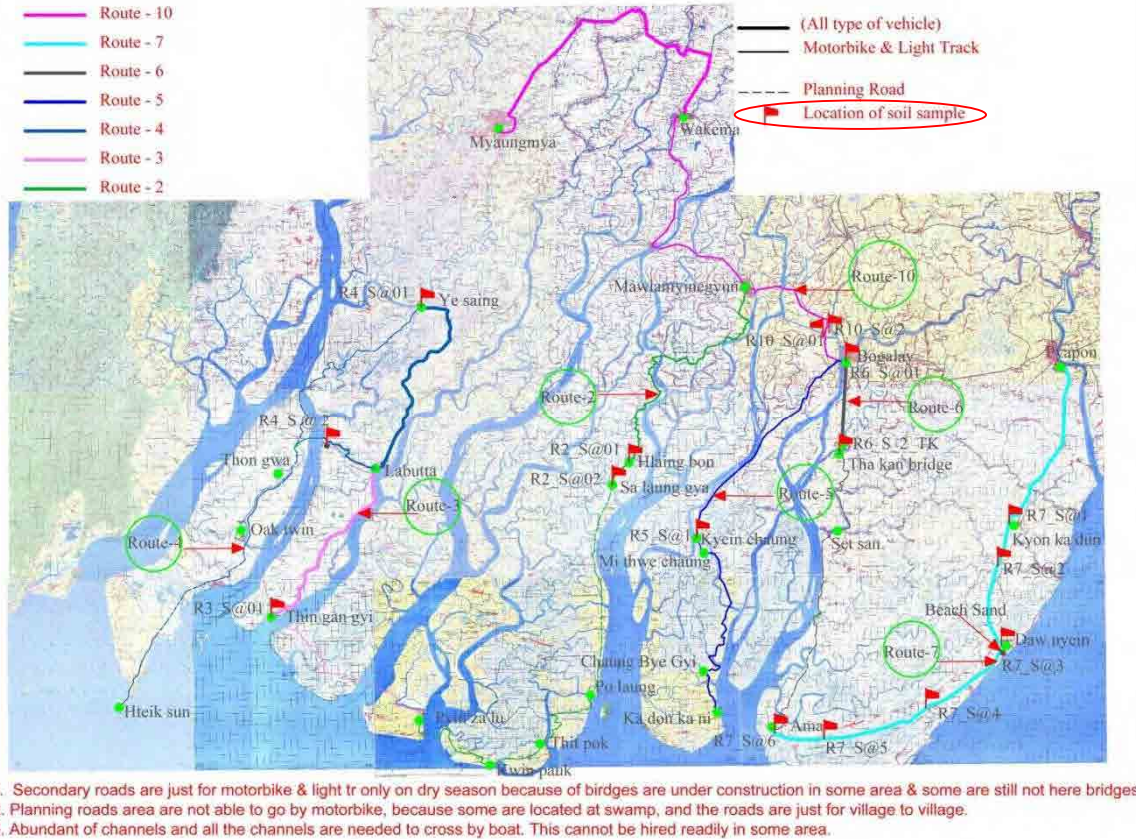
No.	Route	Location No.	Sample Type	Weight (kg)	Sampled Date	Date of Arrival	Remark
1	R-4	1	Soil Sample	61.0	5.3.2013	11.3.2013	3 bags
2		1	Sample for Water Content	0.6	5.3.2013	11.3.2013	
3	R-7		Beach Sand Sample	6.0	7.3.2013	11.3.2013	1 bags

Remark: 1) Additional soil sample for R-4, take from near Labuttalot village.  
2) Beach sand sample for R-7, take from near Daw Nyein village.

The Photo of Soil Samples locations please see in annex-E.

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**Figure-3.3.1 Plan Map of Soil Samples Points at Ayeyarwady Region**

## **CHAPTER-4      LABORATORY TEST FOR SAMPLES**

The soil samples were transported to Road Research Laboratory (RRL) of Public Works in Yangon. The laboratory test was carried out by RRL. This chapter shows the results for each test.

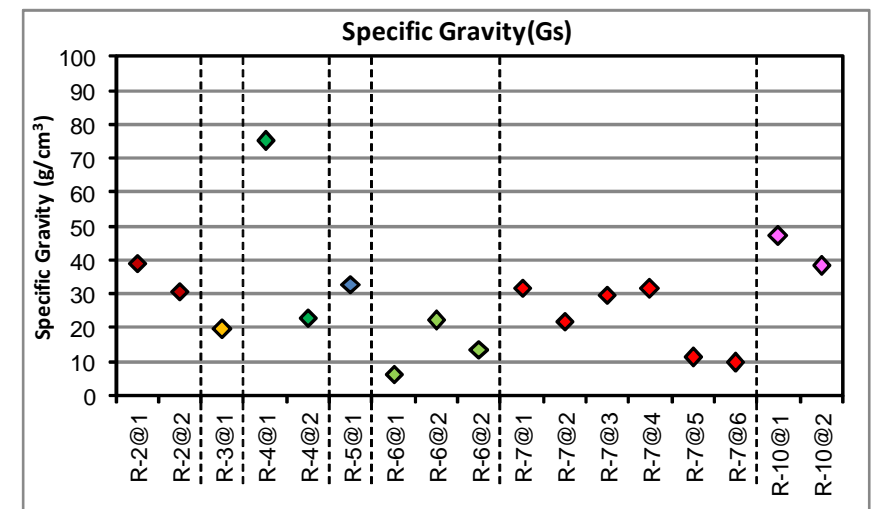
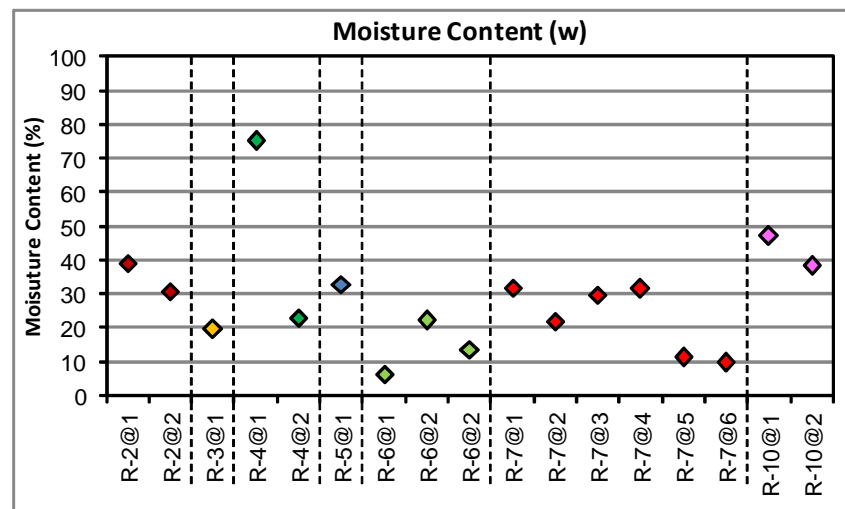
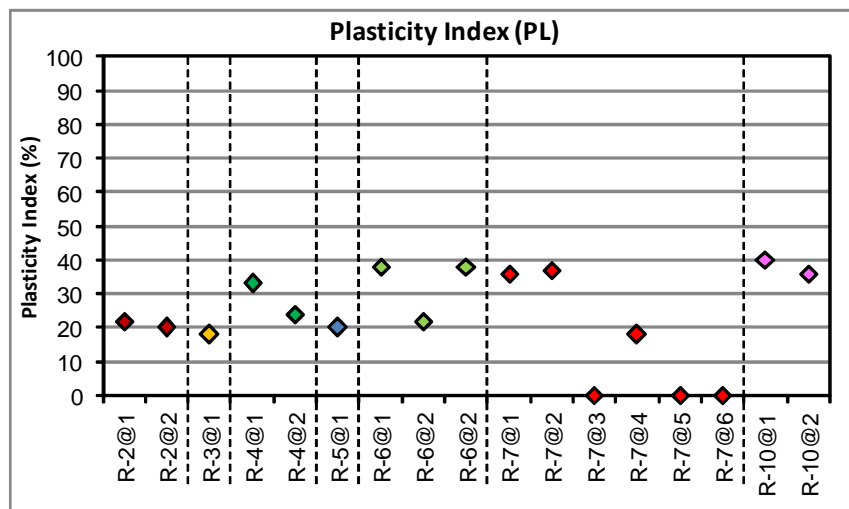
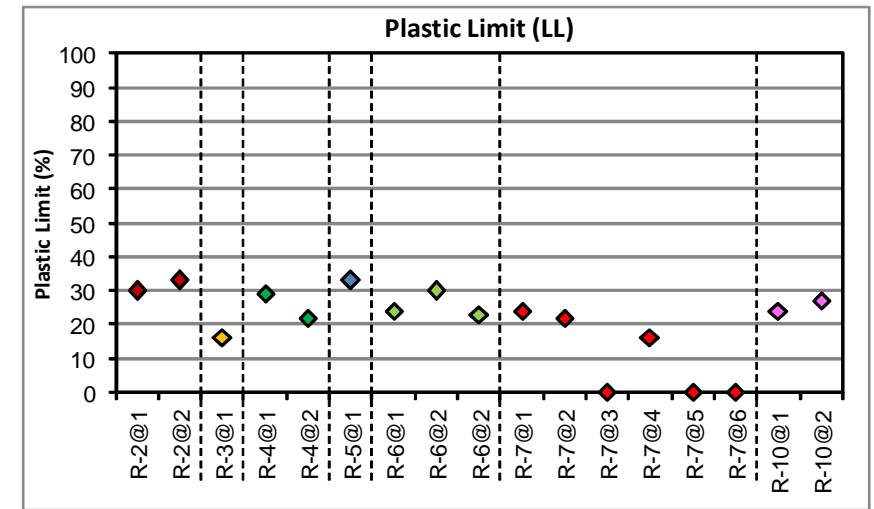
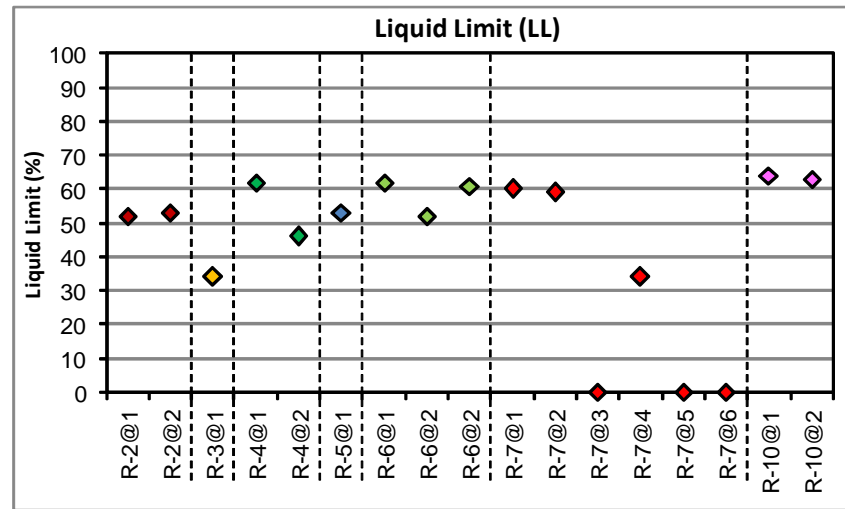
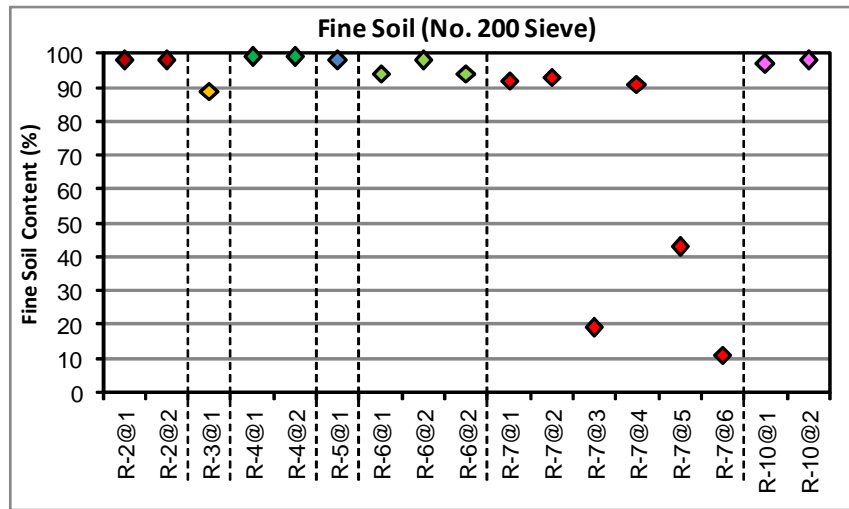
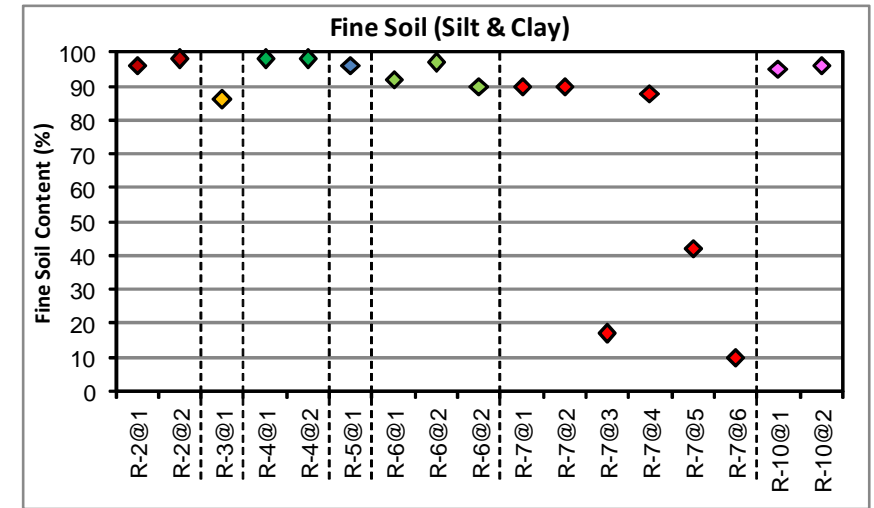
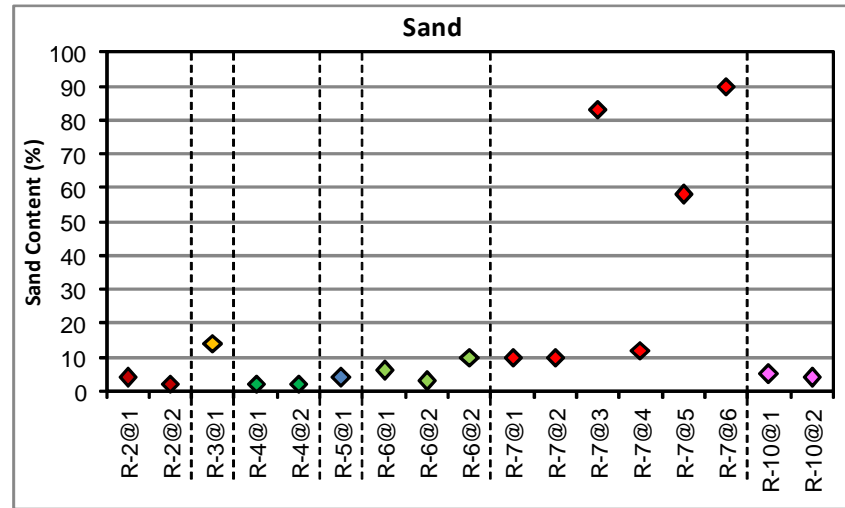
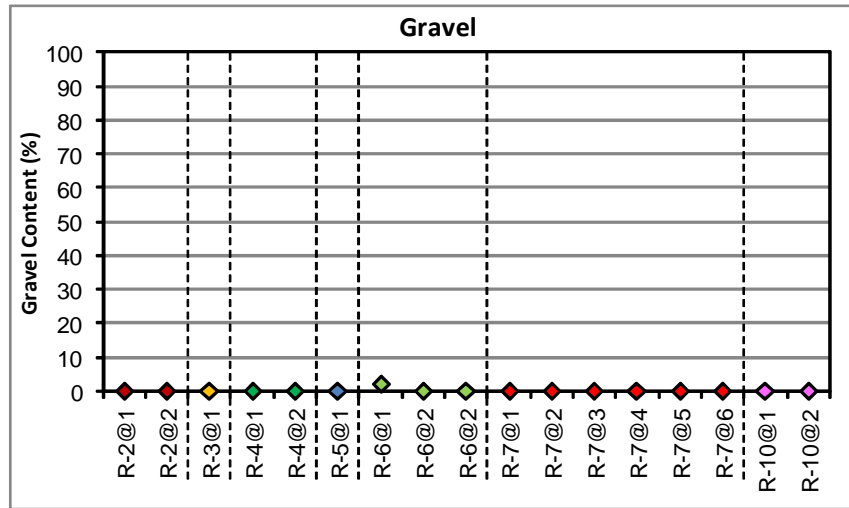
As the result of laboratory test, it is understand that a fine soil contains at almost sampling location. However, a part of Route No.7 contains much sandy soil.

**Table-4.1 PHYSICAL TEST RESULTS**

**PHYSICAL TEST RESULTS**

**JOB & LOCATION - The Project for Improvement of Road Technology in Disaster Affected Area ( Ayeyarwaddy Division )  
( JICA )**

Sample (No.)	Road Number and Road Section	SAMPLE			SOIL CLASSIFICATION	MECHANICAL ANALYSIS TEST RESULTS										ATTERBERG LIMITS			Moisture Content w	Specific Gravity
		Route (No.)	Location (No.)	Unified Soil Group		GRAVEL			SAND			SILT	CLAY	FINE	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)			
						Coarse 60 to 20 (mm)	Medium 20 to 6 (mm)	Fine 6 to 0.6 (mm)	Coarse 2 to 0.6 (mm)	Medium 0.6 to 0.2 (mm)	Fine 0.2 to 0.06 (mm)	0.06 to 0.002 (mm)	Less than 0.002 (mm)	Minus No.200 sieve (mm)						
						(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)						
1	R-02 - Mawlamyinegyun-Hlaingbone-Thitpoak-Kwinpouk-Pyinzalu Road	R-2	1	MH	Light Yellowish Grey SILT & CLAY trace Sand	-	-	-	-	-	4	51	45	98	52	30	22	38.9	2.68	
2	R-02 - Mawlamyinegyun-Hlaingbone-Thitpoak-Kwinpouk-Pyinzalu Road	R-2	2	MH	Light Yellowish Grey SILT & CLAY trace Sand	-	-	-	-	-	2	55	43	98	53	33	20	30.7	2.68	
3	R-03 - Labutta-Tinganyi-Pyinzalu Road	R-3	1	CL	Light Grey Clayey SILT some Sand	-	-	-	2	2	10	53	33	89	34	16	18	19.5	2.62	
4	R-04 - Labutta-Thongwa-Oaktwin-Hteiksun Road	R-4	1	CH	Light Grey Silty CLAY trace Sand	-	-	-	-	-	2	33	65	99	62	29	33	75.1	2.68	
5	R-04 - Labutta-Thongwa-Oaktwin-Hteiksun Road	R-4	2	CL	Yellowish Grey SILT & CLAY trace Fine Sand	-	-	-	-	-	2	55	43	99	46	22	24	22.8	2.70	
6	R-05 - Bogale-Kyeinchaung-Katonkani Road	R-5	1	MH	Light Grey SILT & CLAY trace Sand	-	-	-	-	-	4	49	47	98	53	33	20	32.8	2.66	
7	R-06 - Bogale-Setsan-Htawpine-Ama Road	R-6	1	MH	Light Grey SILT & CLAY trace Gravel trace Sand	-	-	2	1	-	5	56	36	94	62	24	38	6.4	2.64	
8	R-06 - Bogale-Setsan-Htawpine-Ama Road	R-6	2	MH	Light Grey SILT & CLAY trace Sand	-	-	-	-	-	3	52	45	98	52	30	22	22.2	2.65	
9	R-06 - Bogale-Setsan-Htawpine-Ama Road	R-6	2	MH	Light Grey SILT & CLAY some Sand	-	-	-	-	-	10	46	44	94	61	23	38	13.5	2.64	
10	R-07 - Pyapon-Kyaonkadun-Dawyein-Ama Road	R-7	1	MH	Yellowish Grey SILT & CLAY some Sand	-	-	-	-	-	10	53	37	92	60	24	36	31.8	2.61	
11	R-07 - Pyapon-Kyaonkadun-Dawyein-Ama Road	R-7	2	MH	Yellowish Grey SILT & CLAY some Sand	-	-	-	-	-	10	50	40	93	59	22	37	22.0	2.62	
12	R-07 - Pyapon-Kyaonkadun-Dawyein-Ama Road	R-7	3	SP-SM	Greyish Yellow SAND some Silt trace Clay	-	-	-	5	22	56	12	5	19	NL	NP	-	29.8	2.67	
13	R-07 - Pyapon-Kyaonkadun-Dawyein-Ama Road	R-7	4	CL	Yellowish Grey SILT & CLAY some Sand	-	-	-	-	-	12	40	48	91	34	16	18	31.4	2.69	
14	R-07 - Pyapon-Kyaonkadun-Dawyein-Ama Road	R-7	5	SP-SM	Light Yellowish Brown Silty SAND trace Clay	-	-	-	5	13	40	33	9	43	NL	NP	-	11.2	2.64	
15	R-07 - Pyapon-Kyaonkadun-Dawyein-Ama Road	R-7	6	SW-SM	Light Yellowish Brown SAND trace Silt trace Clay	-	-	-	8	32	50	6	4	11	NL	NP	-	9.6	2.70	
16	R-10 - Bogale-Mawlamyinegyun-Wakema-Myaungmya Road	R-10	1	MH	Dark Grey SILT & CLAY trace Sand	-	-	-	-	-	5	51	44	97	64	24	40	47.1	2.68	
17	R-10 - Bogale-Mawlamyinegyun-Wakema-Myaungmya Road	R-10	2	MH	Dark Grey SILT & CLAY trace Sand	-	-	-	-	-	4	48	48	98	63	27	36	38.3	2.67	





(i) Material: Stone sample

Route: R-6

Location: No.1

**TABLE-4.2 GRAIN SIZE DISTRIBUTION**

<b>SIEVE (mm)</b>	<b>GRADING OF COARSE AGGREGATE PASSING ( % )</b>
50.0	100
37.5	97.6
25.0	91.0
20.0	76.3
14.0	50.5
10.0	18.8
5.0	0.32
2.36	0.1

**Remarks :** Tested on received basis.

(ii) Material: Sand sample

Route: R-6

Location: No.1

**TABLE -4.3 GRAIN SIZE DISTRIBUTION**

<b>SIEVE (mm)</b>	<b>GRADING OF FINE AGGREGATE PASSING ( % )</b>
10	100
5	100
2.36	99.8
1.18	99.4
0.6	98.4
0.3	84.2
0.15	13.0

**The Project of Site Survey For Roads in Ayeyarwady Region**

Ayeyarwady Division, The Union of Myanmar

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(iii) Material: Sand sample

Route: R-7

Location: Near Daw Nyein Village

**TABLE-4.4 GRAIN SIZE DISTRIBUTION**

<b>SIEVE (mm)</b>	<b>GRADING OF FINE AGGREGATE PASSING ( % )</b>
10	100
5	100
2.36	100
1.18	100
0.6	99.98
0.3	99.94
0.15	84.0

**Remarks :** Tested on received basis.

## **CHAPTER-5 CONCLUSION**

The road survey was carried out for the following road.

- Route No.7 (Pyapon-Kyaonkadun-Dawnyein-Amar)
- Route No.2 (Mawlamyinegyum-Hlaingbone-Thitpoak-Kwinpouk-Pyinzalu)
- Route No.6 (Bogalay-Setsan)
- Route No.10 (Bogalay-Mawlamyinegyum-Wakema-Myaungmya)
- Route No.3 (Labutta-Tingangyi-Pyinzalu)
- Route No.4 (Labutta-Thongwa-Oaktwin-Hteiksun)
- Route No.5 (Bogalay-Kyeinchaung-Katonkani)

The road survey was carried out the existing condition, a hearing and a sampling etc. for these roads.

There are many size rivers in Ayeyarwady Region. Since many rivers are distributed, there are many parts which divide a road. Moreover, the elevation of a road has many parts lower than 2m. Therefore, it is high possibility of sinking a road according to such as a cyclone or a flood.

Since most of road materials contain a fine soil, a road condition becomes fragile by such as rain. Therefore, when a road is improved, it is appropriate to mix and use sand and gravel (stone) for locally material.

--- End of Document ---

## **Annex-A**

# **History of (11) Routes of Road Network at Detail Area in Ayeyarwady Region**

GOVERNMENT OF THE REPUBLIC OF THE UNION OF MYANMAR

MINISTRY OF CONSTRUCTION

PUBLIC WORKS



THE HISTORY OF

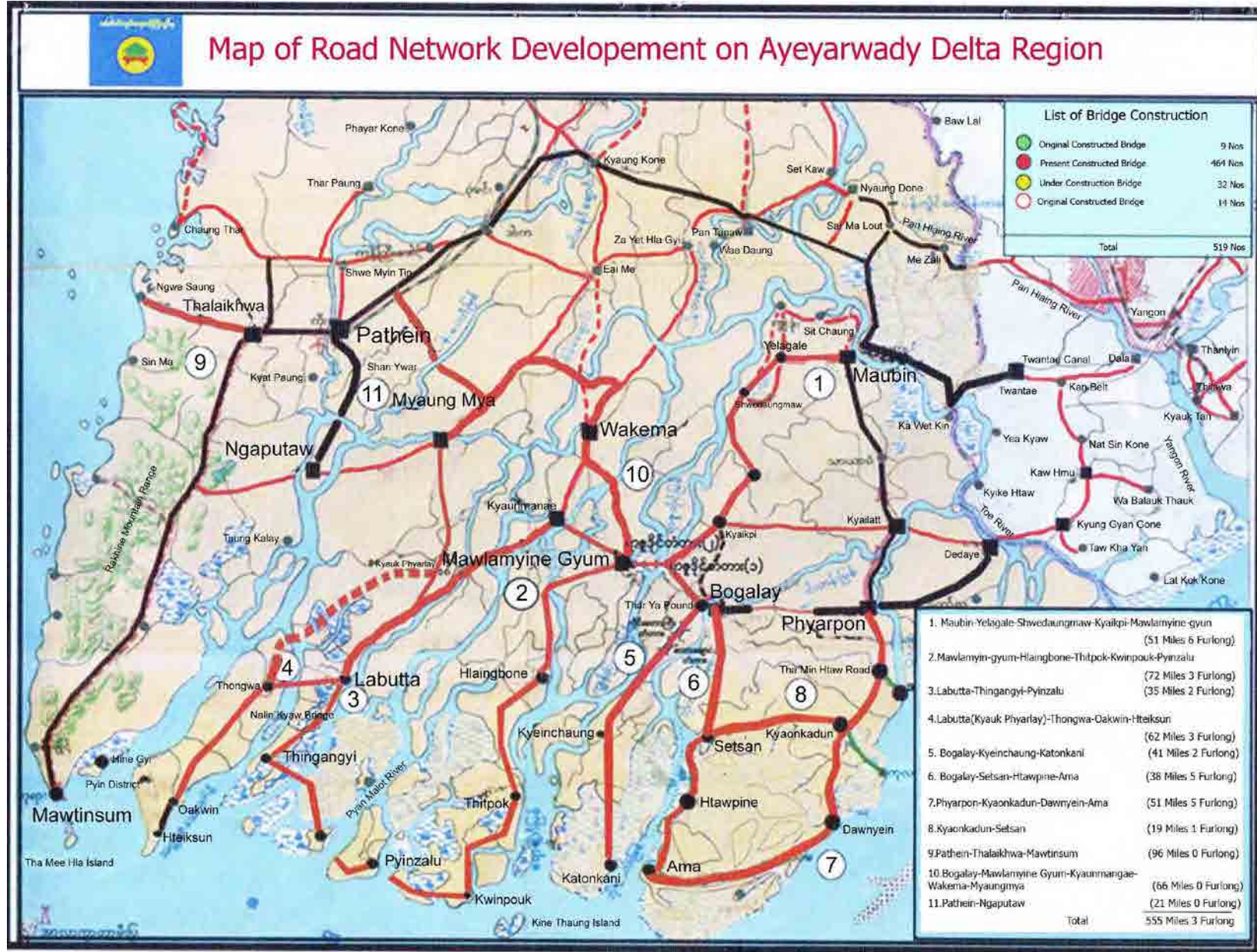
11 ROUTES OF ROAD NETWORK AT DELTA AREA

IN

AYEYARWADY REGION

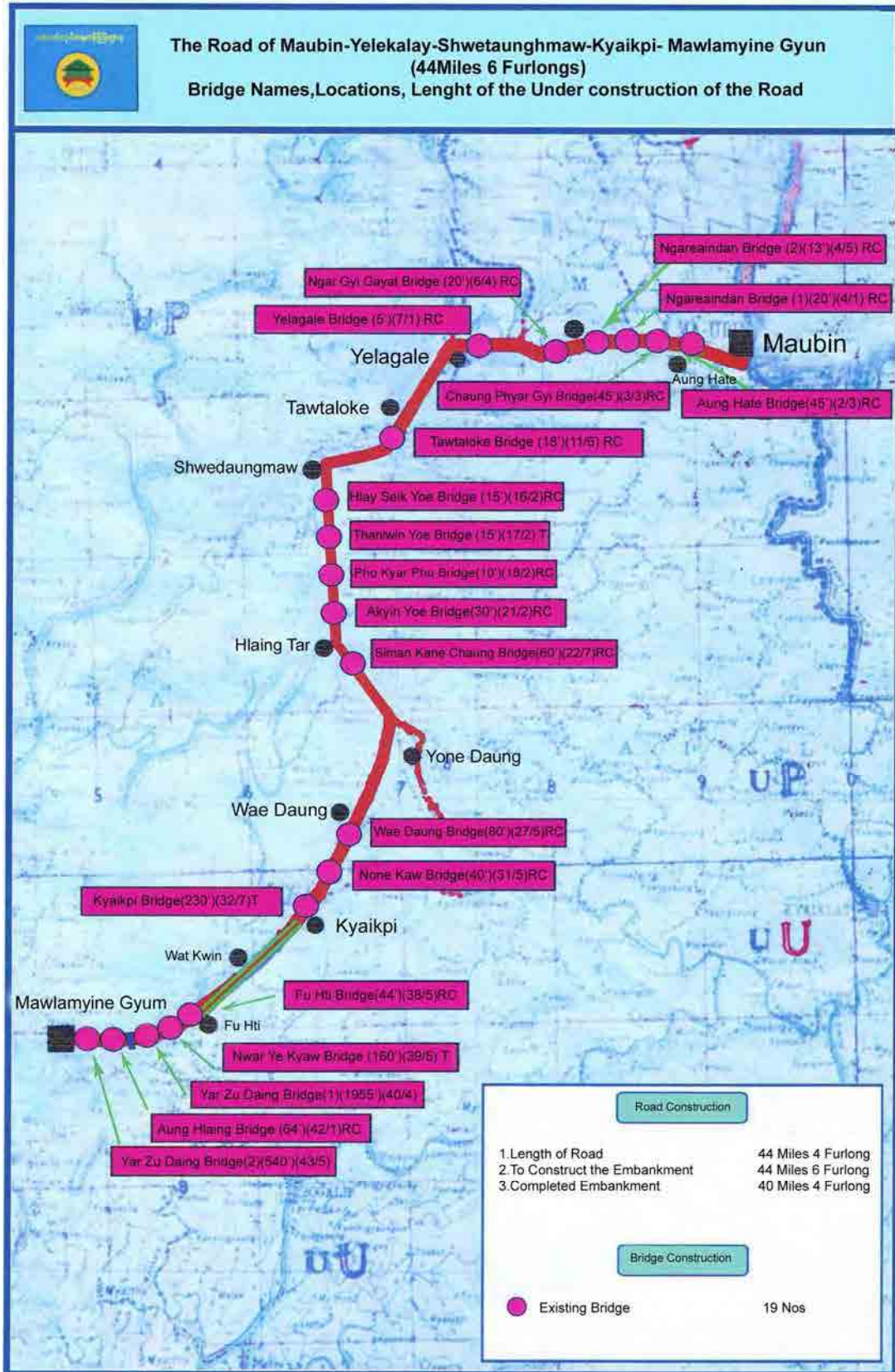
DATE; 6<sup>TH</sup> FEBRUARY, 2013

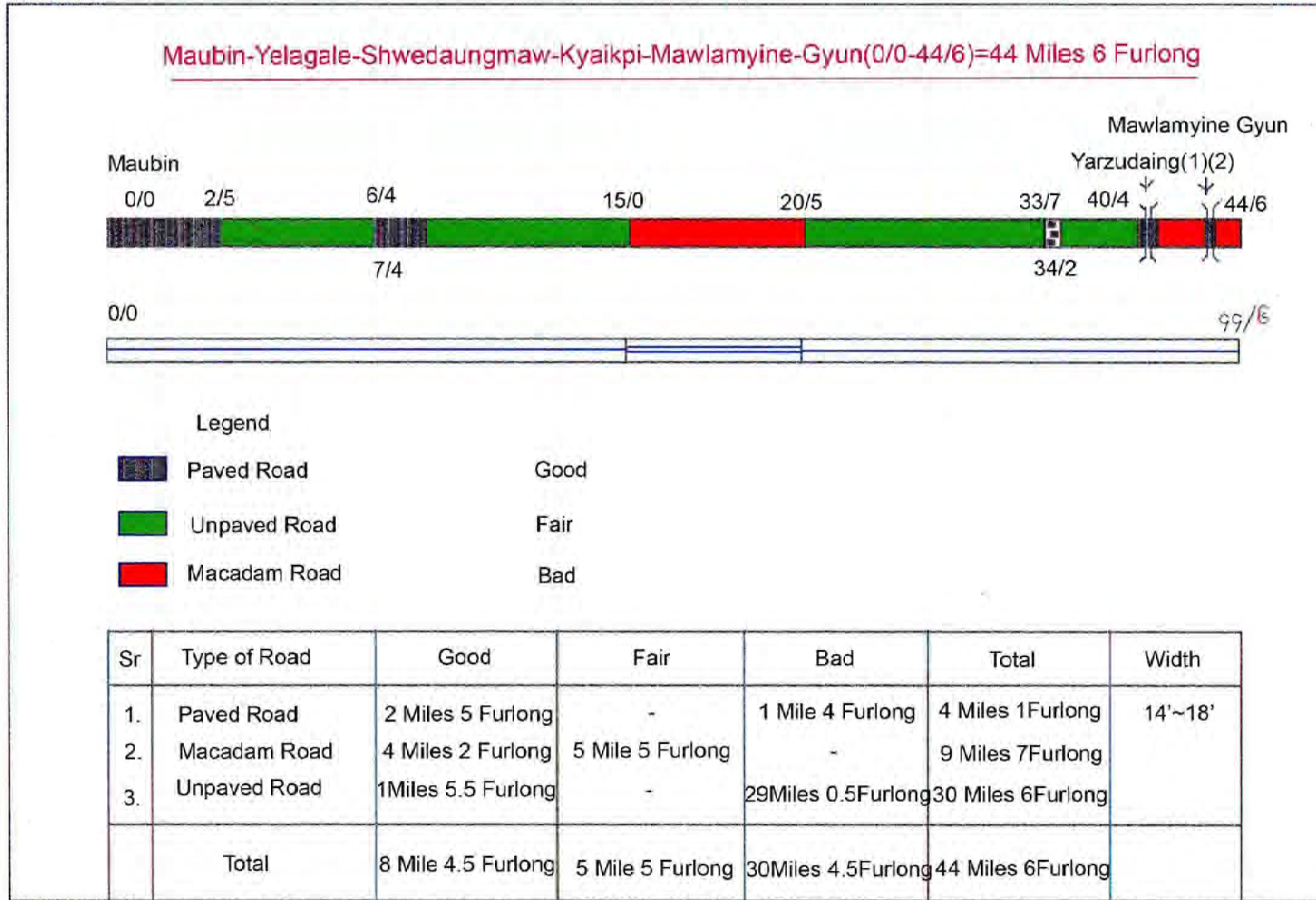
GOVERNMENT OF THE REPUBLIC OF THE UNION OF MYANMAR



The Project of Site Survey For Roads in Ayeyarwady Region  
Ayeyarwady Division, Union of Myanmar

Annex-18







**The Project of Site Survey For Roads in Ayeyarwady Region  
Ayeyarwady Division, Union of Myanmar**

1. Name of Road	- Maubin - Yae Lae Kalay- Shwe Taung Hmaw - Kyaikpi - Mawlamying Kyun Road	
Road Length	Mile 0/0 - 44-6 = 44 Miles 6 Furlong	
2. "Ka" list Registered Road	- No.	
3. Type of Road	- Union Highway	
4. History of the Road	- Attached	
5. Mile post starting Town/Village	- Mile 0/0 Maubin Town,	
6. Mile post Ending Town/Village	- Mile 44/6 Mawlamying Kyun	
7. Road crossing at Town/Village	(1) Maubin	Mile 0/0
Railway, River, Stream	(2) Soon Thaike	Mile 6/5
	(3) Yae Lae Kalay	Mile 8/5
	(4) Panpin Su	Mile 9/5
	(5) Tawtalout	Mile 11/0
	(6) Shwe Taung Hmaw	Mile 15/0
	(7) Hlaing Tar	Mile 20/4
	(8) Wei Daung	Mile 27/1
	(9) Kyaikpi	Mile 33/1
	(10) Wak Kwin	Mile 37/7
	(11) Phu Hte	Mile 38/7
	(12) Nwar Yae Kyaw	Mile 40/0
	(13) Yae Lein	Mile 41/3
	(14) Mawlamying	Mile 43/5
8. Borders	- Maubin Township	Mile 0/0-18/6
	Kyaik Lat Township	Mile 18/6-27/5
	Mawlamying Kyun Township	Mile 27/5-44/6
9. Road Construction material	- Not available	
10. Mile post	- Yes (Concrete)	
11. Furlong post	- Yes (Concrete)	
12. Road boundary post	- No.	
13. Type of Road		
	Paved Road	= 4 Miles 1 Furlong
	Macadam Road	= 9 Miles 7 Furlong
	Unpaved Road	= 30 Miles 6 Furlong
	Earth Road	= -
	<hr/> Total	<hr/> = 44 Miles 6 Furlong
Length and width of Road	- Attached as condition chart	

**The Project of Site Survey For Roads in Ayeyarwady Region  
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14. Formation width - 30ft wide  
 15. Embankment Height - 6ft wide  
 16. Road Cross Section - Attached  
 17. Road Shoulder                      Type                      Width                      Thickness  
                                                   Earth                      10'                      6"  
 18. Road alignment map - Attached  
 19. Pipe Culver) / out let drain - No

20. List of Bridges on the Road

Sr.	Name	No.	Length	Width	Type	Constructed year	Capacity
1.	Aung Heit	2/3	45'	-	RCC	2011	-
2.	Chaung Phyar Gyi	3/3	45'	-	RCC	2011	-
3.	Ngar Eintan (1)	4/1	20'	-	RCC	-	-
4.	Yae Lae Kalay	4/5	5'	-	RCC	-	-
5.	Ngar Gyi Garat	8/6	20'	-	RCC	-	-
6.	Ngar Eintan (2)	7/4	15'	-	RCC	-	-
7.	Taw Talout	11/6	10'	-	RCC	-	-
8.	Hlay Seik Yoe	16/2	15'	-	RCC	-	-
9.	Thanlwin Yoe	16/7	15'	-	Timber	-	-
10.	Phoe Kyar Phuu	18/4	10'	-	RCC	2011	-
11.	Ahkyin Yoe	21/3	30'	-	RCC	2010	-
12.	Semankin stream	22/6	60'	-	RCC	2010	-
13.	Wei Daung	27/5	80'	-	RCC	2010	-
14.	None Kaw	31/5	40'	-	RCC	-	-
15.	Kyaikpi	34/4	230'	-	Timber	2011	-
16.	Phu Hte	38/7	44'	-	RCC	-	-
17.	Nwar Yae Kyaw	39/3	160'	-	Timbe	-	-
18.	Razu Daing (1)	40/4	1955'	-	RCC	-	-
19.	Aung Hlaing	42/1	60'	-	RCC	-	-
20.	Razu Daing (2)	44/1	540'	-	RCC	-	-

**The Project of Site Survey For Roads in Ayeyarwady Region  
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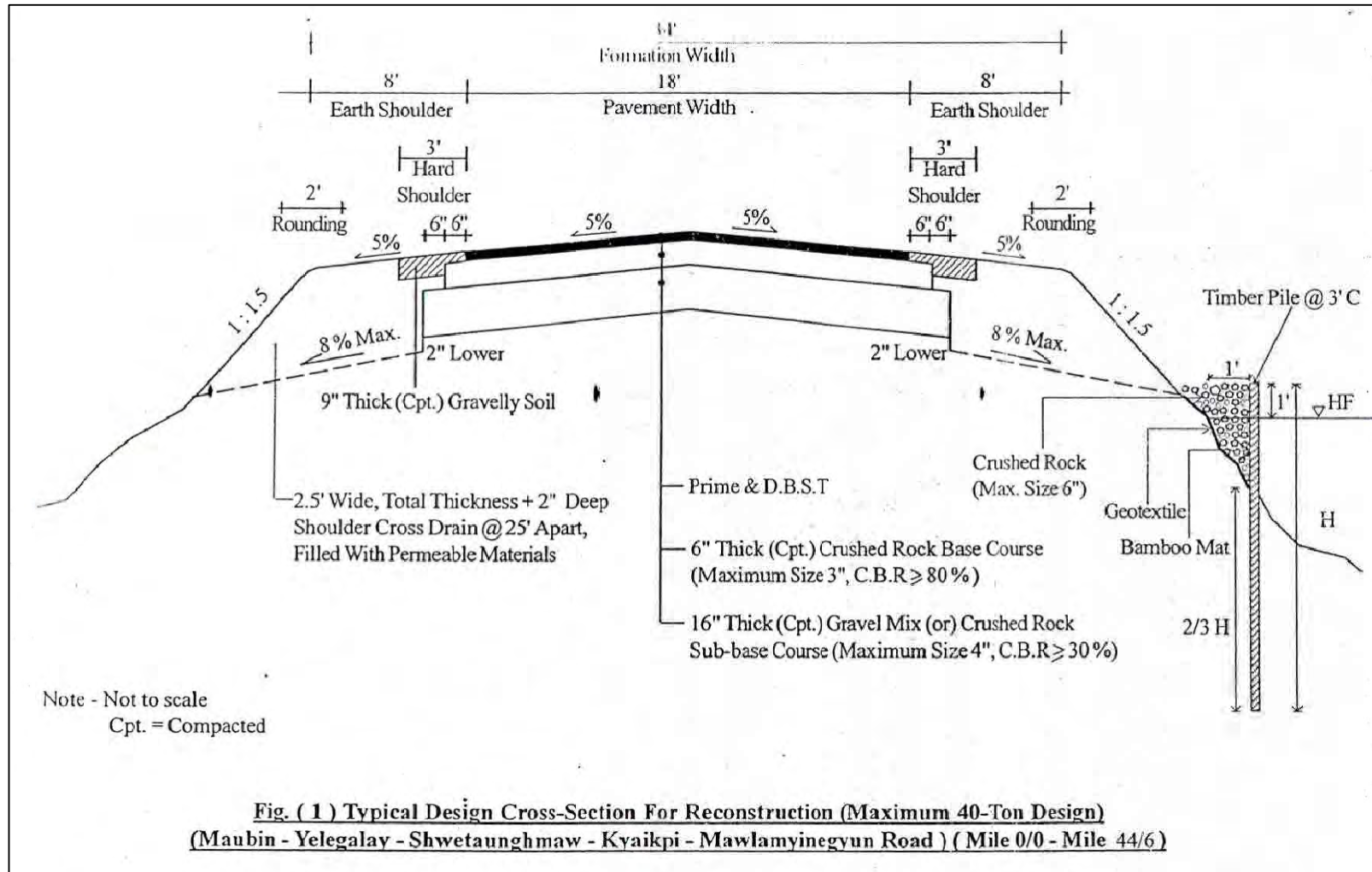
21. Retaining wall	-	No
22. Road Side drains	-	No
23. Geometric Design	-	No

Supplement (4)

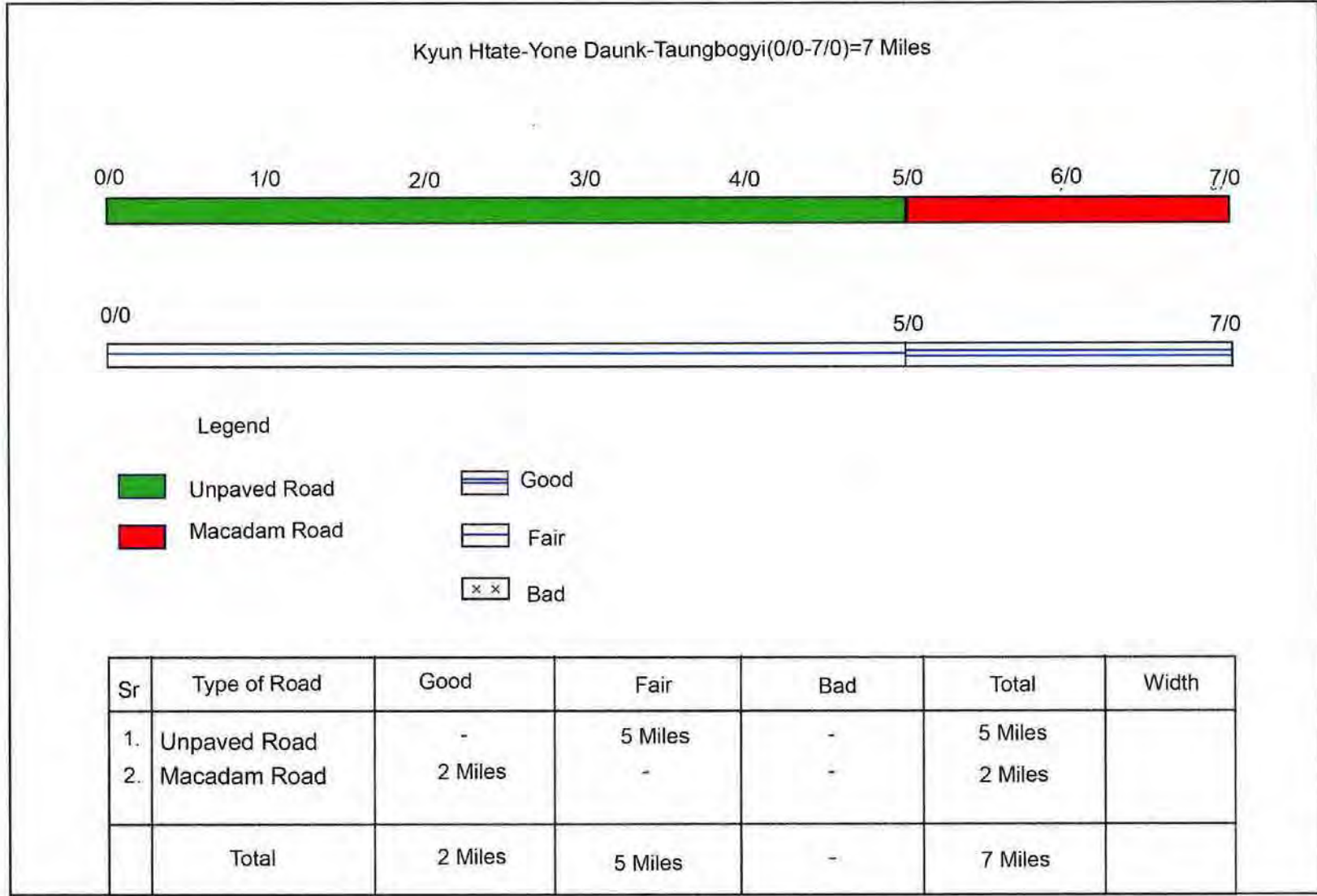
History of the Road -

In 2008 May, Nargis hit in the Ayarwaddy Region and many people lost their lives and properties. Main transportation for delta area is water way and to increase road network in the area, to transport during shot time and to avoid lost by cyclone and natural disaster, Higher personnel/authority decided to construct road network in Ayeyarwaddy Region. Ministry of Construction was given duty to implement said road network and Road Construction Special Group No. (4) is working on MaU Pin-Yaele Kalay-Shwe Taung Hmaw-Kyaikpi-Mawlamyingkyun Road on 9.6.2008. Except Yarzudaing bridge and Myinkakone bridge, all bridges are motorable bridge during dry season from MaU Pin to Mawlamying Kyun.

After completion and opening of Yarzudaing bridge No. (2) on 9.1.2010 and No. (1) on 22.7.2010, people living in the area can go to Yangon any time and any season.



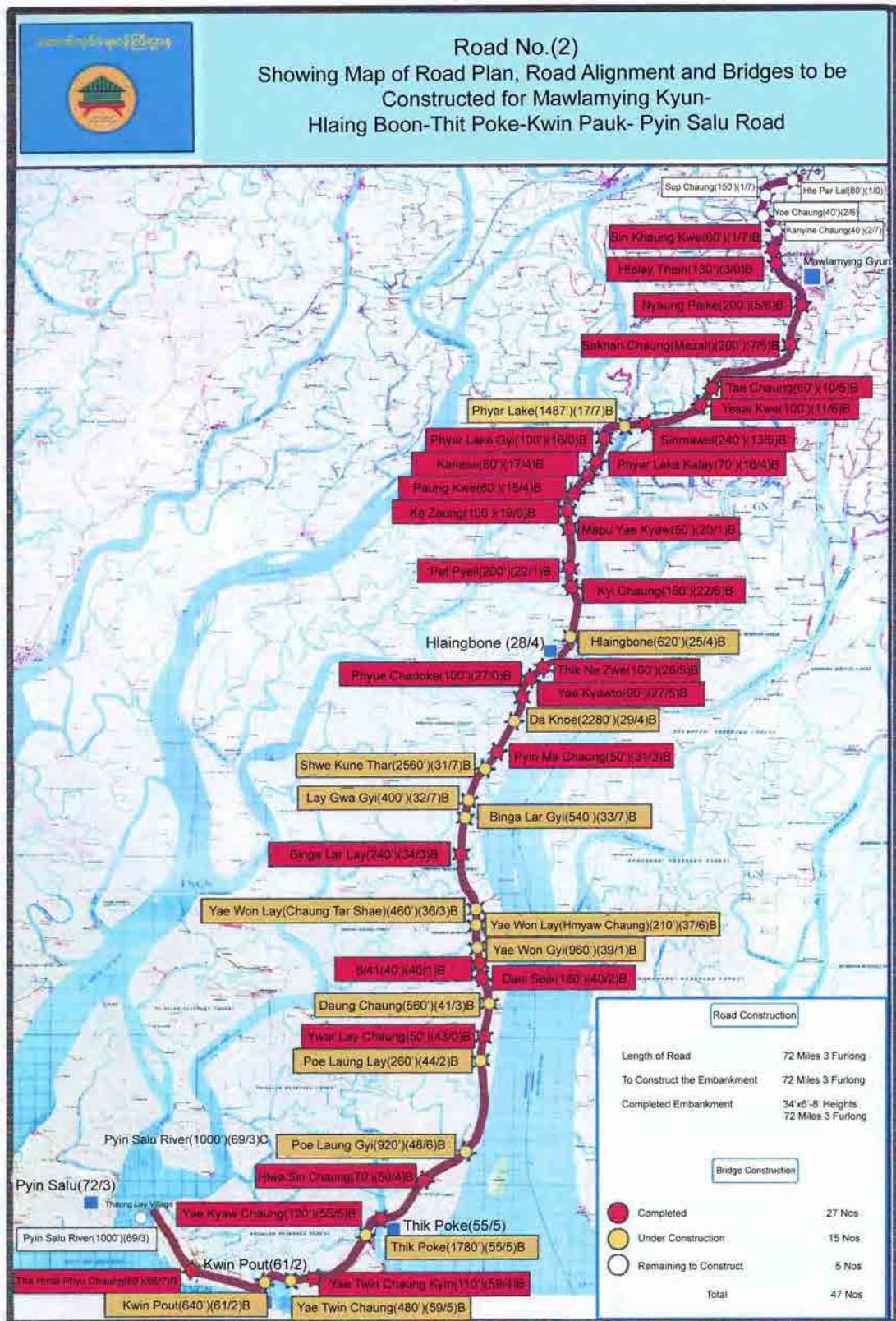
**Fig. ( 1 ) Typical Design Cross-Section For Reconstruction (Maximum 40-Ton Design)**  
**(Maubin - Yelegalay - Shwetaunghmaw - Kyaikpi - Mawlamyinegyun Road ) ( Mile 0/0 - Mile 44/6 )**



**The Project of Site Survey For Roads in Ayeyarwady Region  
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1. Road Name - Kyun Hteit - Yone Daung - Taung Boe Gyi Road  
Length of Road Mile 0/0 - 7/0 = 7 Miles
2. "Ka" List registered Road - No.
3. Type of road (Union Main Road)- No.
4. History of the Road - Started on 1989 and Constructed to Earth Road by self- help basis and used the road. it is Situated at Flatland Area.
5. Mile post starting Town/village - Mile 0/0 Kyaiklat Town, Kyun Hteit Village
6. Mile post ending Town/village - Mile 7/0 Kyaiklat Town, Taung Boe Gyi Village
7. The Road Cross at Town/village - In Kyaiklat Township - Myan Aung Su - Lay Eintan - Botaesu- Nyaung Pinsu - Than Phyu Su - Gon - Hsin Tar - Yone Dong)
8. Border - Maubin - Maw Kyun - Mile (From 22/4½ to Bridge of Taung Boe Gyi Mile 7/0
9. Construction materials - River Sand, River gravel (can purchase)  
Location Approximately 15 miles far away from present road.
10. Mile post - No.
11. Furlong post - No.
12. Road Boundary post - No.
13. Type of Road - upgrading of Earth Road to macadam road  
Width - 13' wide
14. Formation Width - 22'
15. Embankment Height - Average 4'
16. Cross Section - No.
17. Road Shoulder - Earth Road shoulder (Average width 4½' Thickness 6")
18. Road alignment map - Attached
19. Pipe Culvert/out let drain - No.
20. No. of bridge along the road - Yone Dong bridge, length (50')
21. Retaining wall - No.
22. Road side drain - No.
23. Geometric Design - Up/ down rate of road - 3% - 4%  
- Diameter of Road turn - 100' - 200'  
- Road Side slope rate - 3% - 4%

Annexe (18)



The Road of Mawlamyine Gyun-Hlaing Bone-Thit Pote-Kwin Pauk-Pyinsalu(0/0-72/3)=72 Miles 3 Furlongs

Mawlamyine Gyun  
0/0

Pyin Salu  
72/3



0/0

72/3



Reference

 Earth Road

 Good

 Fair

 Bad

Sr	Type of Road	Good	Fair	Bat	Total	Width
1	Earth Road	72 Miles 3 Furlong	=	=	72 Miles 3 Furlong	
	Total	72 Miles 3 Furlong	-	-	72 Miles 3 Furlong	



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1. Road Name - Road of Mawlamying-Gyun - Hlaing Bone - ThitPoke - Kwin Pauk -  
Pyin Salu Mile (0/7 - 72/3) = 72 Miles 3 Furlong
2. "A" Listed Road - Not
3. Union Main Road - Union Main Road
4. Background of the Road - (See annex)
5. Mile Post Starting Town/Village - Mile 0/0 = Thu Htay Gone
6. End of Mile Post Town/Village - Mile 72/3 = Pyin Salu
7. The Road crossing at Town/Village
- |                            |           |
|----------------------------|-----------|
| (1) Thu Htay Gone Village  | Mile 0/0  |
| (2) Htepar Lei Village     | Mile 1/0  |
| (3) Ywar Thitsu Village    | Mile 1/7  |
| (4) Hein Chaung Village    | Mile 2/2  |
| (5) Ka Nyin Chaung         | Mile 2/6  |
| (6) Hsin Gaung Kwe Village | Mile 4/7  |
| (7) Htee Lay Thein Village | Mile 6/0  |
| (8) Nyaung Peik Village    | Mile 8/6  |
| (9) Sekkan Chaung Village  | Mile 13/5 |
| (10) Awa Chaung Village    | Mile 16/5 |
| (11) KaZaung Village       | Mile 22/1 |
| (12) Pat Pyae Village      | Mile 25/3 |
| (13) Hlaing Boon Village   | Mile 28/4 |
| (14) DaNone Village        | Mile 32/4 |
| (15) LayGwaGyi Village     | Mile 35/7 |
| (16) DaNeSap Village       | Mile 43/2 |
| (17) PoeLaungLay Village   | Mile 47/2 |
| (18) PoeLaungGyi Village   | Mile 51/6 |
| (19) ThitPoke Village      | Mile 58/1 |
| (20) KwinPauk Village      | Mile 64/2 |
| (21) Thaung Lay Ywar       | Mile 70/3 |
| (22) PyinSaLu Town         | Mile 72/3 |
8. Borders - Mile 0/0 - 32/4 Mawlamying Kyun Township  
Mile 32/4 - 72/3 Laputta Township
9. Local products for Road construction- No

**The Project of Site Survey For Roads in Ayeyarwady Region  
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To describe approximate amount and condition

10. Mile Post - Present (Concrete)  
 11. Furlong Post - Present (Concrete)
12. Road Boundary Post - No
13. Type of Road - Asphalt = -  
 Macadam Road = -  
 Solid Road (Mix Road)= -  
 Earth Road = 72 Mile 3 Furlong  
 Total = 72 Mile 3 Furlong

Length (Mile) & Width - Described to Road condition Chart (Annex)

14. Width of embankment- Average Width 34' (At average at top)  
 15. Height of embankment - Average Width 5' - 8'  
 (Earth Filling)
16. Map of Road Transverse (cross) Section - Described on Annex
17. Road Shoulder **Type** **Width** **Tickness**  
 Earth 3' 8'
18. Map of Road Alignment - Described in (Annex)

19. Culvert / Drain Tube

Sr.	Location	Type	Measurement
1.	Culvert (1/1) 0/7 - 1/0	Concrete	3'Ø
2.	Culvert (1/2) 1/0 - 1/1	“	“
3.	Culvert (2/2) 1/1 - 1/2	“	“
4.	Culvert (3/2) 1/2 - 1/3	“	“
5.	Culvert (4/2) 1/4 - 1/5	“	“
6.	Culvert (5/2) 1/6 - 1/7	“	“
7.	Culvert (6/2) 1/7 - 2/0	“	“
8.	Culvert (1/3) 2/1 - 2/2	“	“
9.	Culvert (3/3) 2/5 - 2/6	“	“
10.	Culvert (3/3) 2/5 - 2/6	“	“
11.	Culvert (4/3) 2/6 - 2/7	“	“
12.	Culvert (5/3) 2/7 - 3/0	“	“
13.	Culvert (1/4) 3/1 - 3/2	“	“

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14.	Culvert (2/4) 3/2 - 3/3	“	“
15.	Culvert (3/4) 3/3 - 3/4	“	“
16.	Culvert (4/4) 3/4 - 3/5	“	“
17.	Culvert (5/4) 3/5 - 3/6	Concrete	3'Ø
18.	Culvert (6/4) 3/6 - 3/7	“	“
19.	Culvert (1/5) 4/1 - 4/2	“	“
20.	Culvert (2/5) 4/3 - 4/4	“	“
21.	Culvert (3/5) 4/4 - 4/5	“	“
22.	Culvert (4/5) 4/5 - 4/6	“	“

20. Bridges along the Road

Sr.	Name	No.	Length	Width	Type	Constructed Year	Capacity
1.	HteParLal	1/1	60'	-	Bailey	-	-
2.	YwarThitSu	1/7	135'	-	□	-	-
3.	Sin Stream	2/2	50'	-	□	-	-
4.	KaNyin Stream	2/6	85'	-	□	-	-
5.	SinKhaungKwe	4/7	60'	-	□	-	-
6.	HteeLayThein	6/0	130'	-	□	-	-
7.	Nyaung Pake	8/6	200'	-	□	-	-
8.	SaKhan Chaung(MaeZarLi)	10/5	200'	-	□	-	-
9.	Tae Stream	13/5	60'	-	□	-	-
10.	YaeSaiKwe	14/6	100'	-	□	-	-
11.	SinMaWae	16/5	238'	-	□	-	-
12.	Phyar Leik	17/7	1487'	-	□	-	-
13.	Phyar Leik Gyi	19/0	100'	-	□	-	-
14.	Phyar Leik Kalay	19/4	70'	-	□	-	-
15.	KaNaso	20/4	80'	-	□	-	-
16.	Phaung Kwe	21/4	80'	-	□	-	-
17.	KaSaung	22/1	180'	-	□	-	-
18.	MaPu Over Bridge	23/1	50'	-	□	-	-
19.	PetPyae	25/1	280'	-	□	-	-

The Project of Site Survey For Roads in Ayeyarwady Region  
Ayeyarwady Division, Union of Myanmar

20.	Gyee Stream	25/6	180'	-	<input type="checkbox"/>	-	-
21.	Hlaing Boon	28/4	560'	-	<input type="checkbox"/>	-	-
22.	ThitNiZwe	29/5	100'	-	<input type="checkbox"/>	-	-
23.	ByueChiHtauk	30/0	100'	-	Bailey	-	-
24.	Yae Kyaw To	30/5	90'	-	<input type="checkbox"/>	-	-
25.	Da Nown	32/4	50'	-	<input type="checkbox"/>	-	-
26.	PyinMa Stream	34/3	50'	-	<input type="checkbox"/>	-	-
27.	Shwe Kyun Thar	34/7	1000'	-	<input type="checkbox"/>	-	-
28.	LayGwaGyi	35/7	335'	-	<input type="checkbox"/>	-	-
29.	BingalarGyi	36/7	400'	-	<input type="checkbox"/>	-	-
30.	Bingalar Lay	37/3	240'	-	<input type="checkbox"/>	-	-
31.	YaeWonLay(Myaw Stream)	39/3	210'	-	<input type="checkbox"/>	-	-
32.	YaeWonLay (Chaung TarShae)	40/6	460'	-	<input type="checkbox"/>	-	-
33.	YaeWonGyi	42/1	780'	-	<input type="checkbox"/>	-	-
34.	8/41	43/0	40'	-	<input type="checkbox"/>	-	-
35.	DaNeSeik	43/2	180'	-	<input type="checkbox"/>	-	-
36.	Daunt Stream	44/3	580'	-	<input type="checkbox"/>	-	-
37.	YwarLay Chaung	6/0	50'	-	<input type="checkbox"/>	-	-
39.	PoeLaungLay	47/2	210'	-	<input type="checkbox"/>	-	-
40.	PoeLaungGyi	51/6	820'	-	<input type="checkbox"/>	-	-
41.	LwaSin Chaung	53/4	70'	-	<input type="checkbox"/>	-	-
42.	YaeKyaw Stream	58/6	120'	-	<input type="checkbox"/>	-	-
43.	ThitPoke	58/5	1720'	-	<input type="checkbox"/>	-	-
44.	YaeTwinChaung Kyin	62/4	100'	-	<input type="checkbox"/>	-	-
45.	YaeTwinChaung Kyal	62/5	420'	-	<input type="checkbox"/>	-	-
46.	KwinPouk	64/2	480'	-	<input type="checkbox"/>	-	-
47.	ThaMaePhyu Stream	68/7	80'	-	<input type="checkbox"/>	-	-
49.	PyinSaLu River	72/3	10000'		<input type="checkbox"/>		

**The Project of Site Survey For Roads in Ayeyarwady Region  
Ayeyarwady Division, Union of Myanmar**

21. Retaining Wall - No.
22. Road Side Drain - No.
23. Geometric Design - Slope rate of Road Turn Radius 20' for 6"  
Supplement (4)

History of the Road

Many people lost their lives and properties when Nargis Cyclone hit to Ayeyarwaddy Region in May 2008. Water way is used as a major transportation and communication route in delta area therefore construction of road is extended up to the shoreline and it will be not only shorter and faster transportation and communication route but also escape and save lives and properties when Cyclone comes.

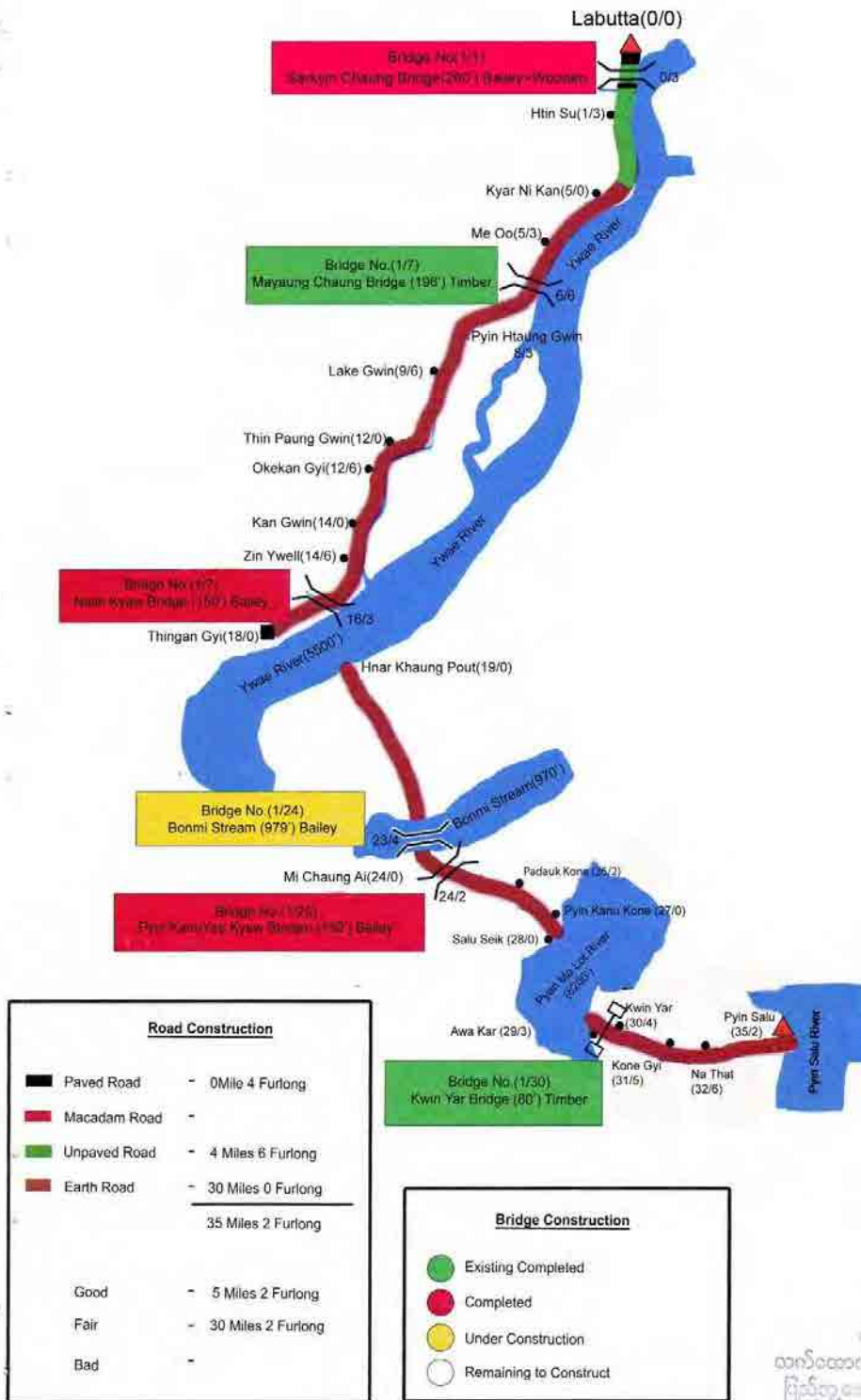
Ministry of construction was given instruction by State level higher authority to construct road network in the delta area. Part of this road (Danone-Thit Poke-Kwin Pauk-Pyinsaly) was implemented by Road construction special group (4). This road section is go through in sandy soil area and forest. When implementation start, all bushes and trees on the road alignment are cut and constructed earth embankment with 40 ft width and enough height to protect flooding.

Mawlamyng kyun-Hlaing Bone-Thit Poke-Kwin Pauk road section (69-miles) is constructed by road special group and road construction special group (4).

Mile 0/0 to 47/4 road section is constructed by road special group (4) while mile 47/4 to 69/3 road section is constructed by road construction special group (4). Formation width 34-ft width and embankment height 6ft to 8ft of earthwork is completed in March 2010. Out of 47 nos. of bridge in this road section, 27 bridges was constructed and completed by March, 2010, 15 bridges are under construction and 5 bridges are under preparation and design stage and construction will be carried out on 2012-2013 budget year.

The Project of Site Survey For Roads in Ayeyarwady Region  
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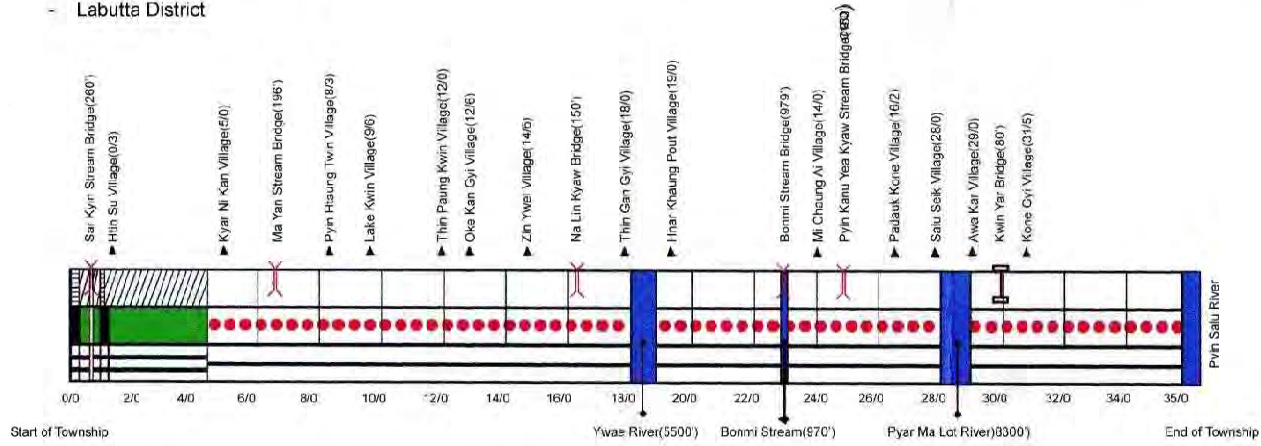
Labutta-Thingangyi-Pyinsalu  
Mile (0/0-35/2=35 Miles 2 Furlong)



မြို့စား ဦးစွာ  
သက်တမ်းတိုးမြှင့်ရေးဦးစီးဌာန (၆၅/၆)  
ပြည်တွင်းရေးရာဌာန

### Present Road Condition

Name of Road - Labutta-Thingyan Gyi- Pyin Salu  
 Division/State - Ayeyarwady Region Division  
 District - Labutta District



Legend of Hsec. Office

- Paved Road
- Macadam Road
- Unpaved Road
- Earth Road
- Good
- Fair
- Bad

Legend of Ayeyarwady Division

- Paved Road
- Sub-Base Second Layer
- Sub-Base First Layer
- Earth Road
- Unpaved Road

Sr	Type of Road	Good	Fair	Bad	Total	Width
1	Paved Road	0 Mile 4 Furlong	-	-	0 Mile 4 Furlong	
2	Macadam Road	-	-	-	-	
3	Unpaved Road	4 Miles 6 Furlong	-		4 Miles 6 Furlong	
4	Earth Road	-	30 Miles 2 Furlong		30 Miles 0 Furlong	
	<b>Total</b>	<b>5 Miles 2 Furlong</b>	<b>30 Miles 2 Furlong</b>		<b>35 Miles 2 Furlong</b>	

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**Road Data**

1. Road Name - Labutta – ThinganGyi- Pyin Salu Road
2. "Ka" List Registered Road - "Ka" listed road/under construction
3. Type of Road (Union Highway) -
4. History of Road - Labutta - Thangangyi - PyinSaLu Road section is connected Labutta with Pyin Salu. Out of this road section, 18 mile 6 furlong is constructed by Irrigation Department as a dike to protect salty water and upgraded to 10ft width stone surfacing road in 1993. In 2008 May, the road was destroyed by Cyclone Nargis and road network construction was started with (11) roads. Labutta-Thingangyi-Pyinsalu road section is road No. (3) and total length is 35 mile 2 furlong up to Pyinsalu sub township and road construction special group No. (15) and Labutta District PWD constructed on 2011-2012 by using five million kyat for paved road and five million for unpaved road. Geographic condition of the road is in flatland area.
5. Mile post Starting Town/Village - Labutta
6. Mile post ending Town/Village - PyinSaLu Sub-Township
7. Road crossing at Town/village - (0/3) HtinSu Village  
Stream, river - (5/0) KyarNiKan Village  
- (8/3) Pyin Htaung Kwin Village  
- (9/6) Leik Kwin Village  
- (12/0) Thinpaung Kwin Village  
- (12/6) Oakkan Gyi Village  
- (14/6) Zin Shwei Village  
- (18/0) Thingan Gyi Village  
- (19/0) Nhar Khaung Pauk Village  
- (24/0) MiChaungAing Village  
- (26/2) Petauk Gone Village  
- (28/0) Salu Seik Village  
- (29/0) Ahwakar Village



**The Project of Site Survey For Roads in Ayeyarwady Region  
Ayeyarwady Division, Union of Myanmar**

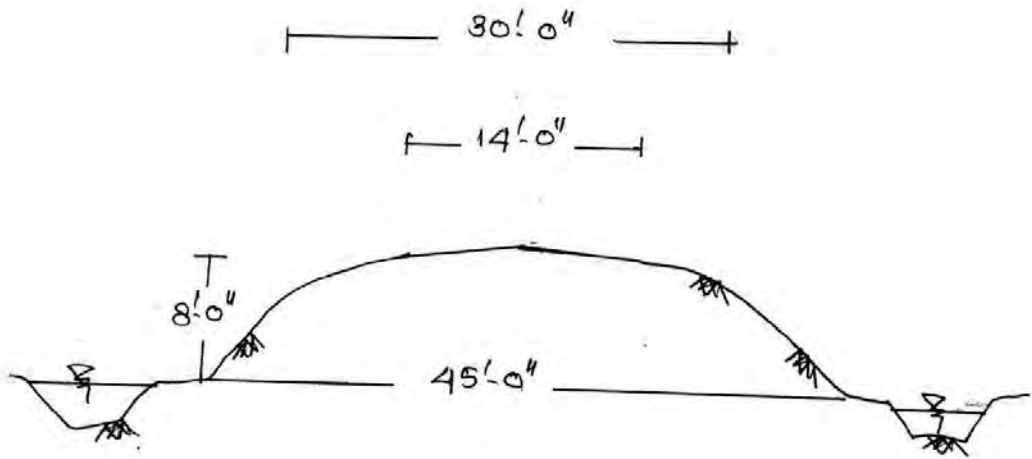
- (31/5) Gone Gyi Village
- 8. Borders - Mile 6/6 (Pyij Salu Sub-Township)
- 9. Construction Materials - Stone, sand, River shingle
- 10. Mile post - Yes ( wooden post)
- 11. Furlong post - Yes (wooden post)
- 12. Road boundary post - No.
- 13. Type of Road
  - Paved Road (0 Mile 4 Furlong)
  - Macadam Road (-)
  - Unpaved Road (1 mile 0 Furlong)
  - Earth Road (33 miles 6 Furlong)
  - Total (35 miles 2 Furlong)
- 14. Formation Width - 30ft
- 15. Embankment Height of raised ground frame limit - Average 8ft
- 16. Road cross section - Attached
- 17. Road shoulder)
 

- Type	Width	Thickness
Stone	3ft	6 inches
- 18. Road alignment map - Attached
- 19. Pipe culvert / out let drain -
- 20. List of bridge along the Road - Attached herewith
- 21. Retaining wall
 

- Location	Type	Length	Width
2/0-2/5 stone	1010ft	20ft	
- 22. Road side drain -
- 23. Geometric Design -

The Project of Site Survey For Roads in Ayeyarwady Region  
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Labutta- Thingangyi- Pyinsalu Road  
Mile 0/0-35/2 = 35 Miles 2 Furlongs  
Section



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**Bridge List Along the Labutta - Thingan Gyi - Pyin Salu Road**

Sr.	Name	No	Length	width	Type	Constructed Year	Load limit	Remark
1.	HsarKyin chaung	1/1	260ft	13ft	Bailey +Timber	2008- 2009	13 Ton	
2.	MayanChaung	1/7	196ft	14ft	concrete +Timber	1997-199	5 Ton	
3.	Nalin Kyaw	1/17	150ft	12ft	Bailey	2009- 2010	13 Ton	
4.	Bonmi chaung	1/24	979ft	12-ft				Completed two side of embankment
5.	Pyinkanuchaung	1/25	150ft	14ft	Bailey+Timber	2009-2010	5 Ton	
6.	Kwinyar	1/30	80ft	12ft	Timber	2008- 2009	5 Ton	

**The Project of Site Survey For Roads in Ayeyarwady Region  
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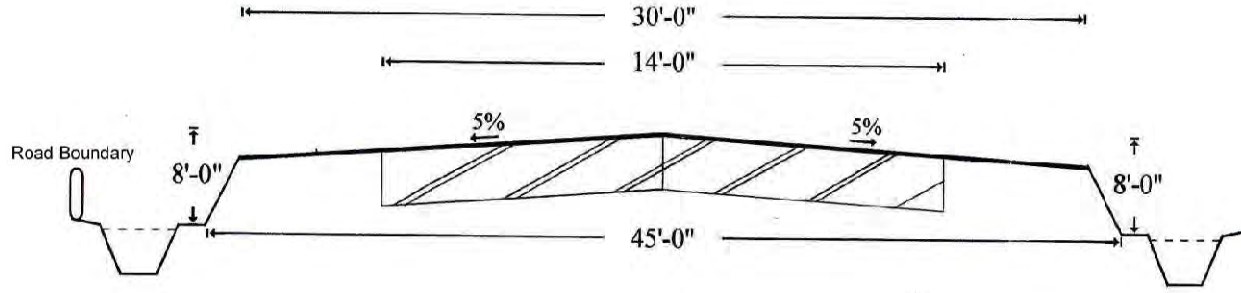
**Road Data**

1. Road name - Labutta - Thongwa - Oaktwin – Htikesun Road  
Length - Mile (0/0-4/7) = 4 miles and 4 Furlong
2. "Ka" List register Road - This is "Ka" Listed Road
3. Type of Road (Union Highway) -
4. History of the Road - Labutta - Thongwa - Oaktwin - Htikesun Road is from Labutta to Thatch of sandbank riverside, 4 miles and 7 Furlong of raised ground frame limit (Earth Filling) project were constructed by Road construction Project special Group (15) Budget year on 2010-2011 Labutta District construction Department was investment amounting to donation Kyat Million 213.00 for the completion of pave mineral asphalt Road 2 miles 3 Furlong and Kyat million 145.50 for the completion of Solid (Hard) Road 1 mile 7 Furlong. There are flatland according to Geographical position.
5. Milestone starting Town/Village - Labutta Town
6. Milestone Ending Town/Village - Labuttalot South Village
7. The Road crossing at Town/Village - (0/4) Nyaung Lein Village
8. Borders - Mile 4/7 (Thatch of sandbank river)
9. Construction materials - stone, sand, River shingle
10. Mile post - Have (wooden post)
11. Furlong post - Have (wooden post)
12. Road boundary post - No.
13. Kind of Road - Paved Road (2 miles 3 Furlong)  
- Macadam Road (-)  
- Unpaved Road (2 miles 4 Furlong)  
- Earth (soil) Road (-)  
- Total (4 miles 7 Furlong)
14. Formation Width - Average 24'

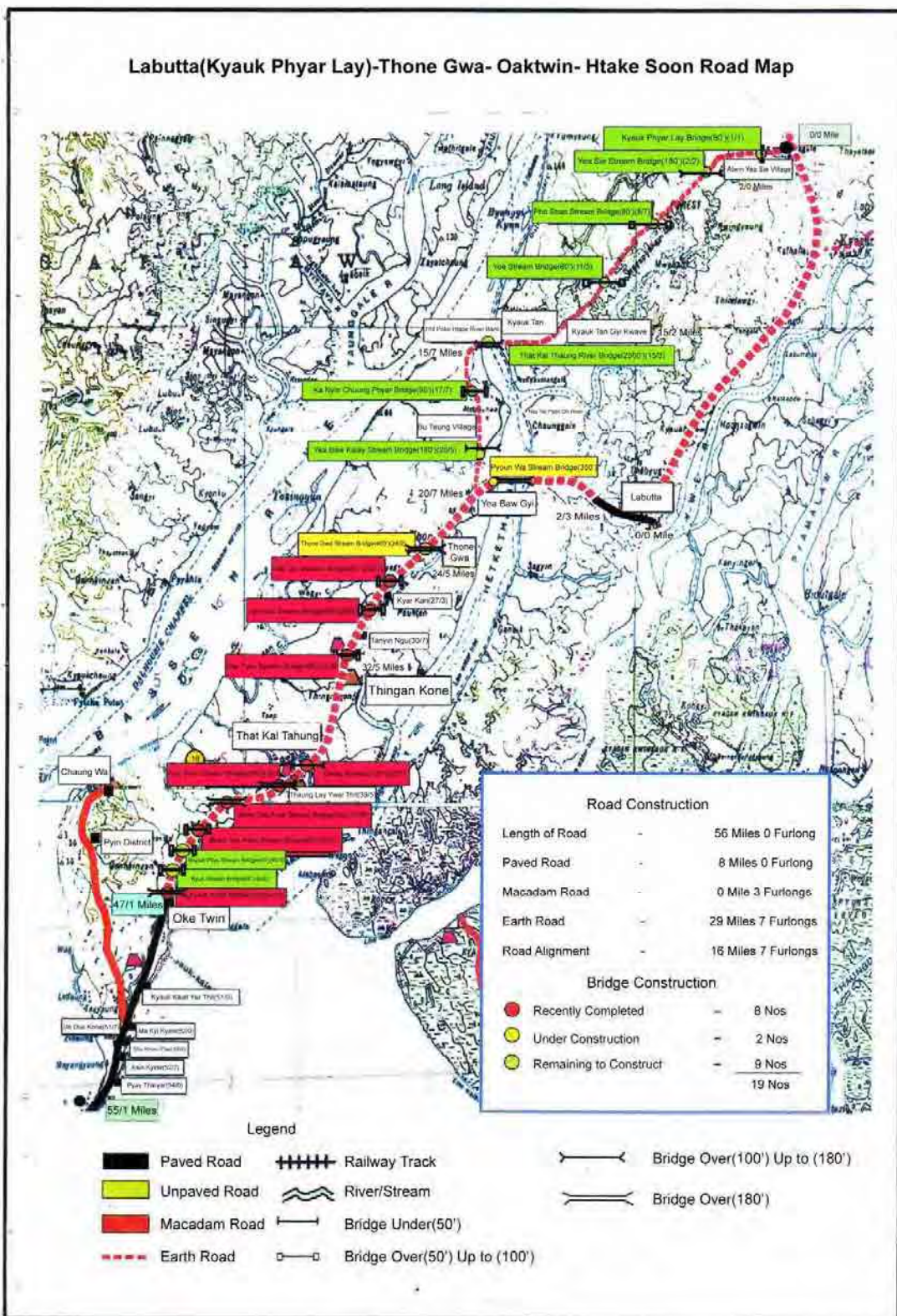
**The Project of Site Survey For Roads in Ayeyarwady Region  
Ayeyarwady Division, Union of Myanmar**

15. Embankment height	- average 4 ft		
16. Road Section	- attached		
17. Road Shoulder	Type	Width	Thickness
	Stone	3-ft	6 inches
18. Road alignment map	- attached		
19. Pipe culvert/out let drain	-		
20. list of bridge along the road	-		
21. Retaining wall	-		
22. Side drain	-		
23. Geometric Design	-		

Labutta-Thone Gwa-Oaktwin-Htake Soon Road  
Mile 0/0-4/7= 4 Miles 7 Furlongs  
Section

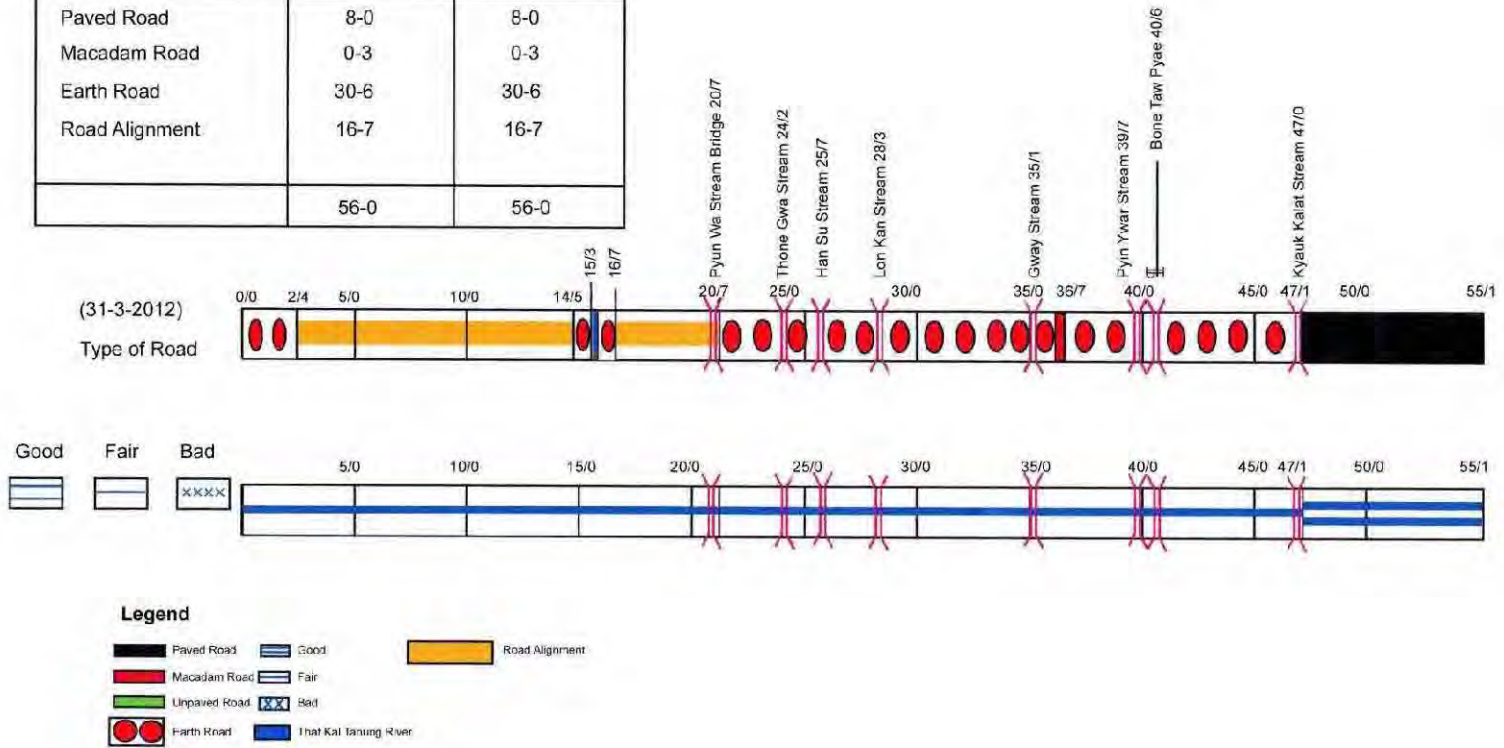


The Project of Site Survey For Roads in Ayeyarwady Region  
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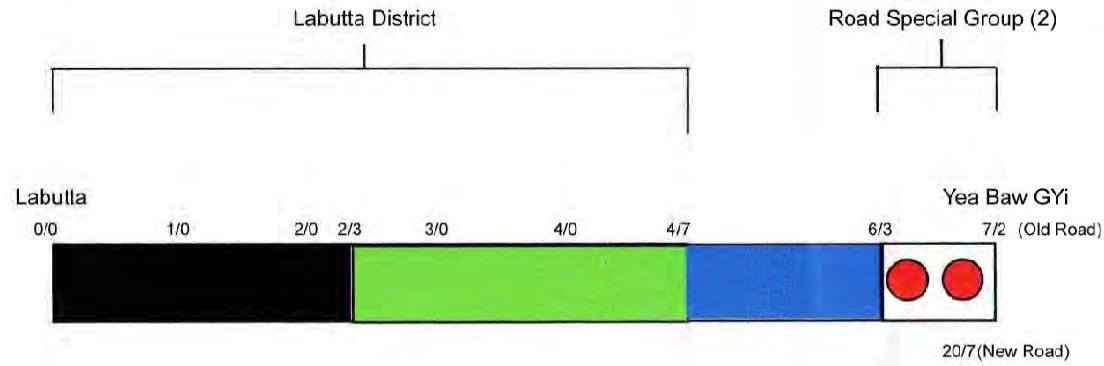
**Implementation plan and completion of Road No.4, the Road of Laputta  
(Kyauk Phyar Lay)- Thangwa- Oaktwin- Htek Sonn for 2012-2013 Budget Year**

Type of Road	Special Road (2) Mile-Furlong	Total Mile-Furlong
Paved Road	8-0	8-0
Macadam Road	0-3	0-3
Earth Road	30-6	30-6
Road Alignment	16-7	16-7
	56-0	56-0





**Road No(4) Labutta(Kyauk Phyar Lay)- Thone Gwa-Oaktwin-Htake Soon Road (Old Road)  
For the Budget Year 2012-1203**



**Legend**

-  Paved Road
-  Macadam Road
-  Unpaved Road
-  Earth Road
-  That Kal Thaug River

**Route No.4, Labutta (Kyauk Phyar Lay) - ThonGwa - Ouktwin - Hteiksun Road**

**Road Data**

1. Name of Road - Labutta (Kyauk Phyarlay) - ThonGwa - Oaktwin - Hteiksun
2. "KA" List registered Road - Yes
3. Type of Road - Main crossing Road
4. History of the Road - RoadConstruction special group (2) werestarted theproject on 23.6.2008. Used of budget amount was2830.50 million kyats till the end of budget yearin2011-2012,Geographicallocate is flatland of sea partand delta region.
5. Mile post Starting Town/Village - Labutta Town, Kyauk Phyar Lay Village
6. Ending of Mile post Town/Village - Hteiksun
7. The Road Crossing at Town/Village - Kyauk Phyar Lay Mile 0/0, YaeSaing inner Village Mile 2/0, Kyauk Tan Gyi turn mile (15/2), Thit Pout Hteik Kan mile (15/7), BuTaung Village mile (20/5), YaeBawGyi mile (20/7), ThonGwa mile (24/5), KyarKa mile (27/3), Kanyin Ngu mile (30/7), Thingan Gone mile (32/5), Thetcal Taung mile (37/5), Thaug Lay New Village mile (39/5), Oaktwin mile (47/4), Kyauk Kalat Village mile (51/0), Deedu Gone mile (51/7), Magyi Chaing mile (52/0), Shukhinthar mile (52/4), Ahsin Chaing mile (52/7), Pyay Tharyar mile (54/0)
- Rivers and Streams - Kyauk Phyar lay Stream, Yae Saing Stream, PhoeShan Stream, Yoe Stream, Thetcal of Sandbank River, Kayin Stream, Yae Baw Lay Stream, Pwanwa Stream, ThonGwa Stream, Hansu Stream, Lwan Kan Stream, Oaktwin Stream, Gway Stream, Pyin Ywar Stream, Boon Taw Pyaye Stream, Musoma Yae Kyaw Stream, Shaw Phyu Stream, Kyun Stream, Kyauk Kalat Stream.
8. Borders - Border with East side of Thetcalthaung River North side of Laputta Township Mile (0/0 - 15/3) and Ngapu Taw Township Mile (15/5 - 55/1)

**The Project of Site Survey For Roads in Ayeyarwady Region  
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9. Road construction material -Stones are obtained unlimit from Ngak Pauk Village, Payar Haung Village during summer season and canbe carried by water way.
10. Mile post -Have (concrete post)
11. Furlong post - Have (Timber post)
12. Road boundary post - No.

13. Type of Road	<u>Paved road</u>	<u>Macadam Road</u>	<u>Earth Road</u>	<u>Road alignment</u>	<u>Total</u>
Road Length (Mile)	8-0	0-3	29-7	16-7	55-1
Old Road	-		0-7	0-7	
				<u>Total</u>	56-0

14. Formation Width - 34'
15. Embankment high - Average 4' to 6'
16. Cross section of Road - Map attached
17. Shoulder - Earth Road, width 3' and Thickness 8"
18. Showing Map of Road alignment - Map attached herewith
19. Pipe culvert / outlet drain - Attached
20. List of bridges on the Road - Attached
21. Retaining wall - No.
22. Road side drain - Drain consist of both side of Road
23. Geometric Design -

**List of Culvert on the Road of**  
**Labutta (Kyauk Phyar Lay) Thongwa - Oaktwin - Hteiksun**

Sr.	Location Mile Stone	Type	measurement	Type
1.	20/5	5x5' Ø Box culvert	30ft	
2.	22/3	5x5' Ø Box culvert	30ft	
3.	23/3	5x5' Ø Box culvert	30ft	
4.	24/4	5x5' Ø Box culvert	30ft	
5.	27/2	5x5' Ø Box culvert	30ft	
6.	27/6	5x5' Ø Box culvert	30ft	
7.	29/4	5x5' Ø Box culvert	30ft	
8.	30/7	5x5' Ø Box culvert	30ft	
9.	31/1	5x5' Ø Box culvert	30ft	
10.	31/4	5x5' Ø Box culvert	30ft	
11.	32/2	5x5' Ø Box culvert	30ft	
12.	32/4	5x5' Ø Box culvert	30ft	
13.	33/4	5x5' Ø Box culvert	30ft	
14.	39/1	5x5' Ø Box culvert	30ft	
15.	39/5	5x5' Ø Box culvert	30ft	
16.	47/4	5x5' Ø Box culvert	30ft	
17.	52/3	5x5' Ø Box culvert	30ft	
18.	52/7	5x5' Ø Box culvert	30ft	

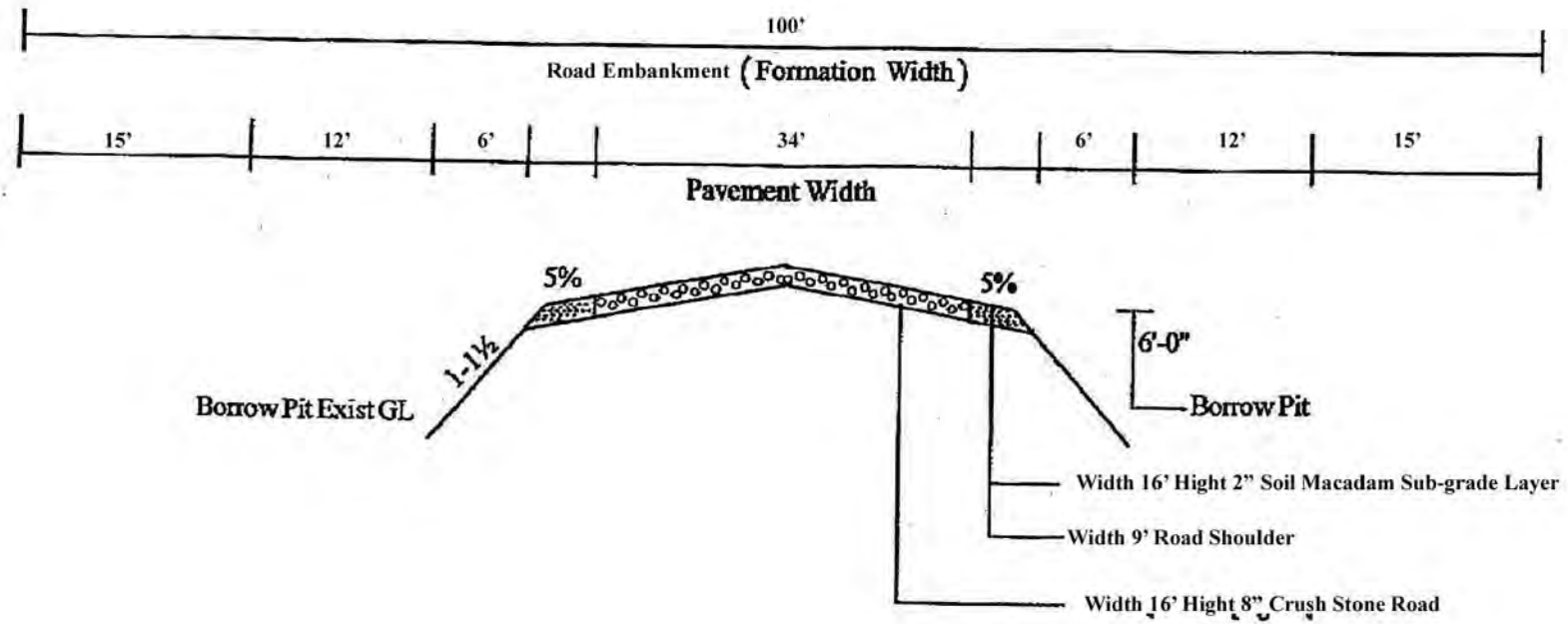
**List of bridges along with Labutta (Kyauk Phyar Lay) - Thongwa - Oaktwin - Hteiksun Road**

Sr	Bridge Name	Name of Stream / River	Location Mile post/No.	Bridge Length(ft)	Type of bridge	Constructed Year	Capacity (Ton)
1.	Kyauk Phyar Lay	Kyauk Phyar Lay Stream	1/1 ~ 1/2	80	Bore pile+ Bailey	-	
2.	Yae Sain	Yae Sain stream	2/0 ~ 1/3	180	Bore pile+ Bailey	-	
3.	Phoe Shan	Phoe Shan stream	8/7 ~ 1/8	80	Bore pile + Bailey	-	
4.	Yoe stream	Yoe stream	11/5 ~ 1/12	60	Bore pile + Bailey	-	
5.	Thaketaung bridge	Thaketaung bridge	15/3 ~ 1/15	2500	Bore pile + Bailey	-	
6.	Ka Nyin Chaung Phyar	Ka Nyin stream	17/7 ~ 1/18	90	Bore pile + Bailey	-	
7.	Yae Paw Lay	Yae Paw Lay stream	20/5 ~ 1/21	350	Bore pile + Bailey	-	
8.	Pwanwa	Pwanwa stream	6/7 ~ 1/7	180	Bore pile + Bailey	(2009-10)	13
9.	Thongwa	Thongwa stream	24/2 ~ 1/2	400	Bore pile + Bailey	Under construction	13
10	Hansu	Hansu stream	25/7 ~ 1/26	60	Bore pile + Bailey	2010-11	13
11	Lwankan	Lwankan stream	28/3 ~ 1/29	80	Bore pile + Bailey	2010-11	13
12	Oaktwin	Oaktwin stream	31/6 ~ 1/32	60	Bore pile + Bailey	2010-11	13
13	Gway stream	Gway stream	35/1 ~ 1/36	150	Bore pile + Bailey	2010-11	13

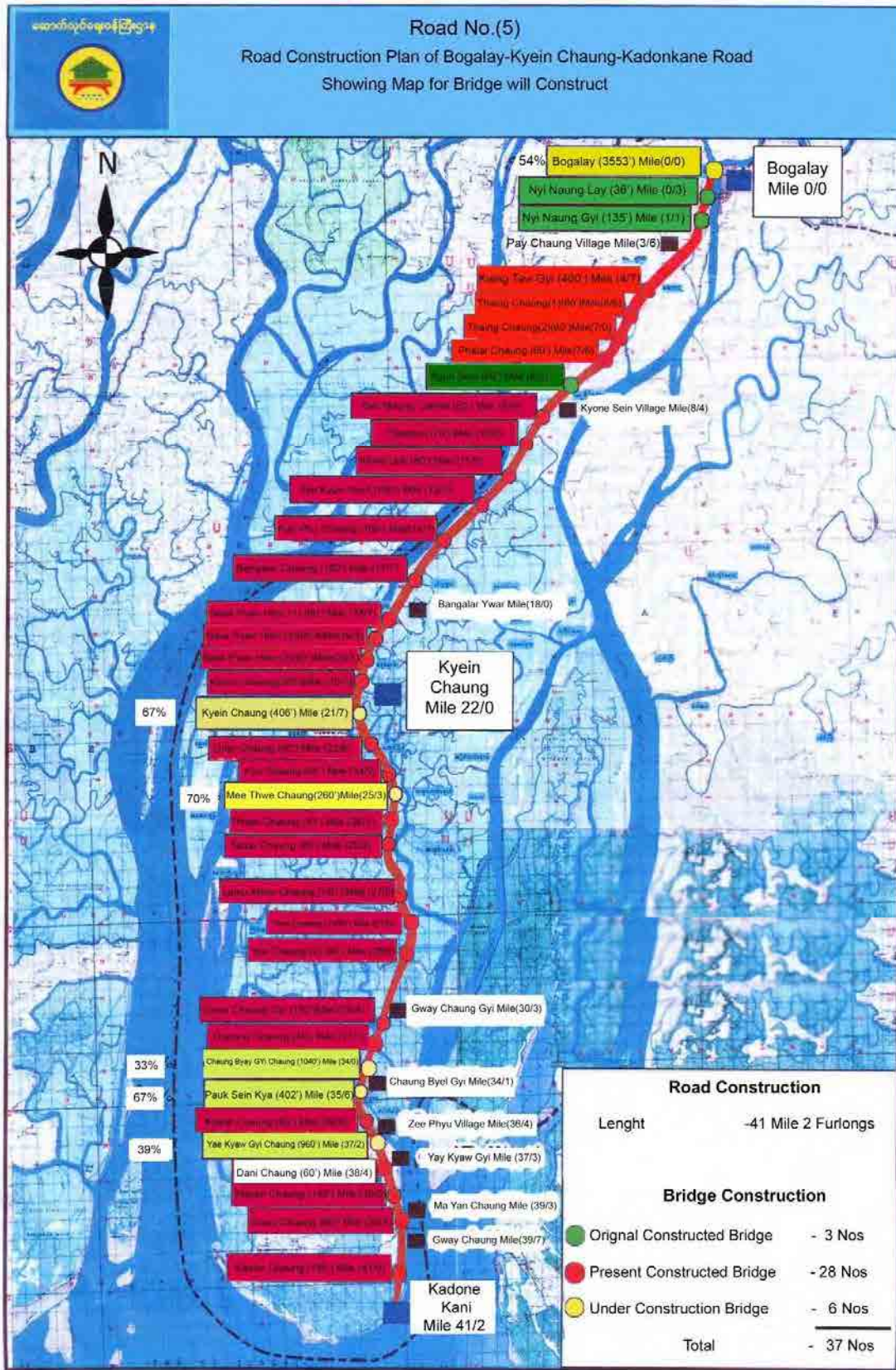
The Project of Site Survey For Roads in Ayeyarwady Region  
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14	Pyin Village	Pyin Village	39/7 ~ 1/40	240	Bore pile + Bailey	2009-10	13
15	Bontaw Pyaye	Bontaw Pyaye	40/6 ~ 1/41	240	Bore pile + Bailey	2009-10	13
16	Moksoma Yae Kyaw	Moksoma Yae Kyaw	43/6 ~ 1/44	90	Bore pile + Bailey	2010-11	13
17	Shaw Phyu	Shaw Phyu	45/3 ~ 1/46	60	Bore pile + Bailey	-	6
18	Kyung stream	Kyung stream	46/0 ~ 2/46	60	Bore pile + Bailey	-	6
19	Kyauk Kalat	Kyauk Kalat stream	47/0 ~ 1/47	526	Bore pile + Bailey	2010-11	13

Road Consturction Project ,Special Group(2)  
Labutta(Kyauk Phyar Lay)-Thone Gwa-Oak-Twin-Htake Soon Road Section



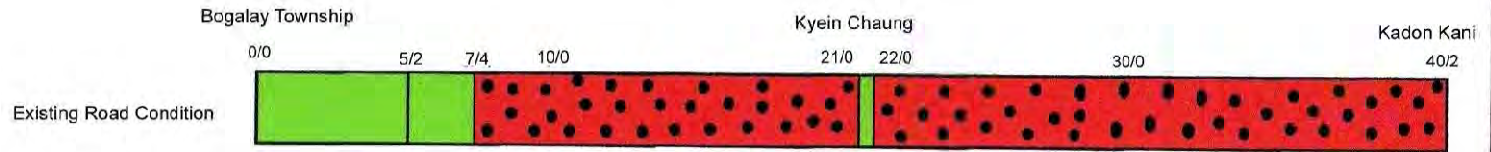
The Project of Site Survey For Roads in Ayeyarwady Region  
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Road No.5  
Bogalay-Kyein Chaung-Kadonkani Mile (0/0-41/2)=41Mile 2 Furlong  
Airport Special Group (2)

Type of Road	Bogalay Township Mile-Furlong	Total Mile-Furlong
Paved Road	-	-
Macadam Road	-	-
Unpaved Road	8-4	8-4
Earth Road	32-6	32-6
Total	41-2	41-2



Legend

- Paved Road
- Macadam Road
- Unpaved Road
- Earth Road

**The Project of Site Survey For Roads in Ayeyarwady Region  
Ayeyarwady Division, Union of Myanmar**

Road No. (5)

Bogalay - Kyein Chaung - Katon Kani Road

Road Data

1. Road Name - Road No. (5), Bogalay - Katon KaNi Road  
Length - (41 Miles 2 Furlong)
2. "Ka" List Registered Road - "Kha" listed road/under construction
3. Type of Road - Union Highway Road, Nargis Road Network No. (5).
4. History of Road - People living in Bogalay Township, PhyarPon District, Ayarwady Region suffered from cyclone and flood on 3.5.2008. Higher authority gave instruction to provide assistance through good road network when cyclone and flood hit again in the future. Ministry of construction carried out construction of road to materialize higher authority's instruction.

Ministry of construction deployed Road Construction Special Group (16) to Bogalay-kyein chaung-Kadonkani road (41-mile 2-furlong) for construction of earth embankment and other related activities such as construction of hill lot, construction of unpaved road and so on. Road Construction Special Group (16) and other special group took responsibilities for construction of road and 37 bridges on the road.

According to guidance gave by Minister and deputy Minister, road No. (5) Bogalay-kyein chaung-Katonkani road construction project was transferred to Airfield construction Special Group (2).

Responsibilities are taken accordingly for construction of 37 bridges

- Road Construction Special Group (16) constructed (3) Nos. of Bridge
- Bridge Construction Special Group (4) constructed (5) Nos. of Bridge
- Bridge Construction Special Group (5) constructed (1) No. of Bridge
- Bridge Construction Special Group (12) constructed (3) Nos of bridge,
- Bridge Construction Special Group (13) constructed (15)Units of bridge,
- Yan - Man Bridge Construction Special Group constructed (6) Units of Bridge
- Road Construction Special Group (16) constructed (4) units of bridge

Road Name - Bogalay - Kyein Chaung - Katon KaNi  
Length Mile - 41 Miles 2 Furlong  
Kind of Road - Earth Road, unpaved Road  
Starting date - (10.6.2008)

Constructed Organization - (1) Road Construction Special Group (16)

**The Project of Site Survey For Roads in Ayeyarwady Region  
Ayeyarwady Division, Union of Myanmar**

(Department)		0/0 Mile to 41/2 (41 Miles 2 Furlong)
Expenditure used	-	3934.572 Million (for road) 16717.906 Million (for bridge) <b>20552.478 Million</b>

<b>Budget Year</b>	<b>Kyat (million)</b>	
<u>Road Construction</u>		
2008-2009	1050.00	(Road Special Group 16)
2009-2010	1300.00	(Road Special Group 16)
2010-2011	521.40	(Road Special Group 16)
2011-2012	100.00	(Road Special Group 16)
2012-2013	903.172	(Airfield Special Group-2)
	<b>3934.572</b>	

<b>Budget Year</b>	<b>Kyat (million)</b>
<u>Bridge Construction</u>	
2008-2009	840.742
2009-2010	2186.395
2010-2011	4635.165
2011-2012	2850.000
2012-2013	6205.604
	<b>16717.906</b>

	Geographical Condition	-	Flatland area in the Delta.
5.	Mile post Starting Town/village	-	Male 0/0 Bokalay Town (Milepost of Bokalay - Satsan)
6.	Milepost Ending Town/village	-	Mile 41/2 Bokalay Town (KaDon KaNi)
7.	Road Crossing at Town/Village -		
	1. TharPaung Village		Mile 0/0
	2. NyiNaungLay		Mile 0/4
	3. NyiNaungGyi		Mile 1/1

**The Project of Site Survey For Roads in Ayeyarwady Region  
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4.	PayChaung Village	Mile 3/6				
5.	KaingTaw Village	Mile 4/7				
6.	KyontSein Village	Mile 8/4				
7.	ThaMaSeikTa Village	Mile 11/7				
8.	PanPhueMyintTan Village	Mile 14/7				
9.	Bingalar Village	Mile 18/0				
10.	KyeinChaung Village	Mile 22/0				
11.	GweChaungGyi Village	Mile 30/3				
12.	ChaungByaeGyi Village	Mile 34/1				
13.	PaukSeinKya Village	Mile 35/6				
14.	ZeePhyu	Mile 36/4				
15.	YaeKyawGyi	Mile 37/3				
16.	DaNeiChaung Village	Mile 38/4				
17.	MaYanChaung Village	Mile 39/3				
18.	GweChaung Village	Mile 39/7				
19.	KaDon KaNi Village	Mile 41/0				
8.	Borders				- Bokalay Township	
9.	Road construction materials -					
	Name of material				- River Sand	
	Location				- Bokalay Town Mile 0/0	
	Be able to produce				- enough for construction of road	
	Distance from Present Road				- 10 Miles 2 Furlong	
	Accessibility				- all weather road	
10.	Mile post	-				
11.	Furlong post	-				
12.	Road boundary post	-				
13.	Type of Road	Paved	Macadam	unpaved	Earth	Total
	Length (Mile)	-	-	10 mile 2 Fur	31 mile 0 Fur	41Mile2Fur
	Width	-	-	16 Ft	34 Ft	
14.	Formation Width	-	Earth Embankment	-	34' - 0" Width	
15.	Embankment Height	-	Average Height	-	6' - 0"	
16.	Cross section	-	Attached herewith			

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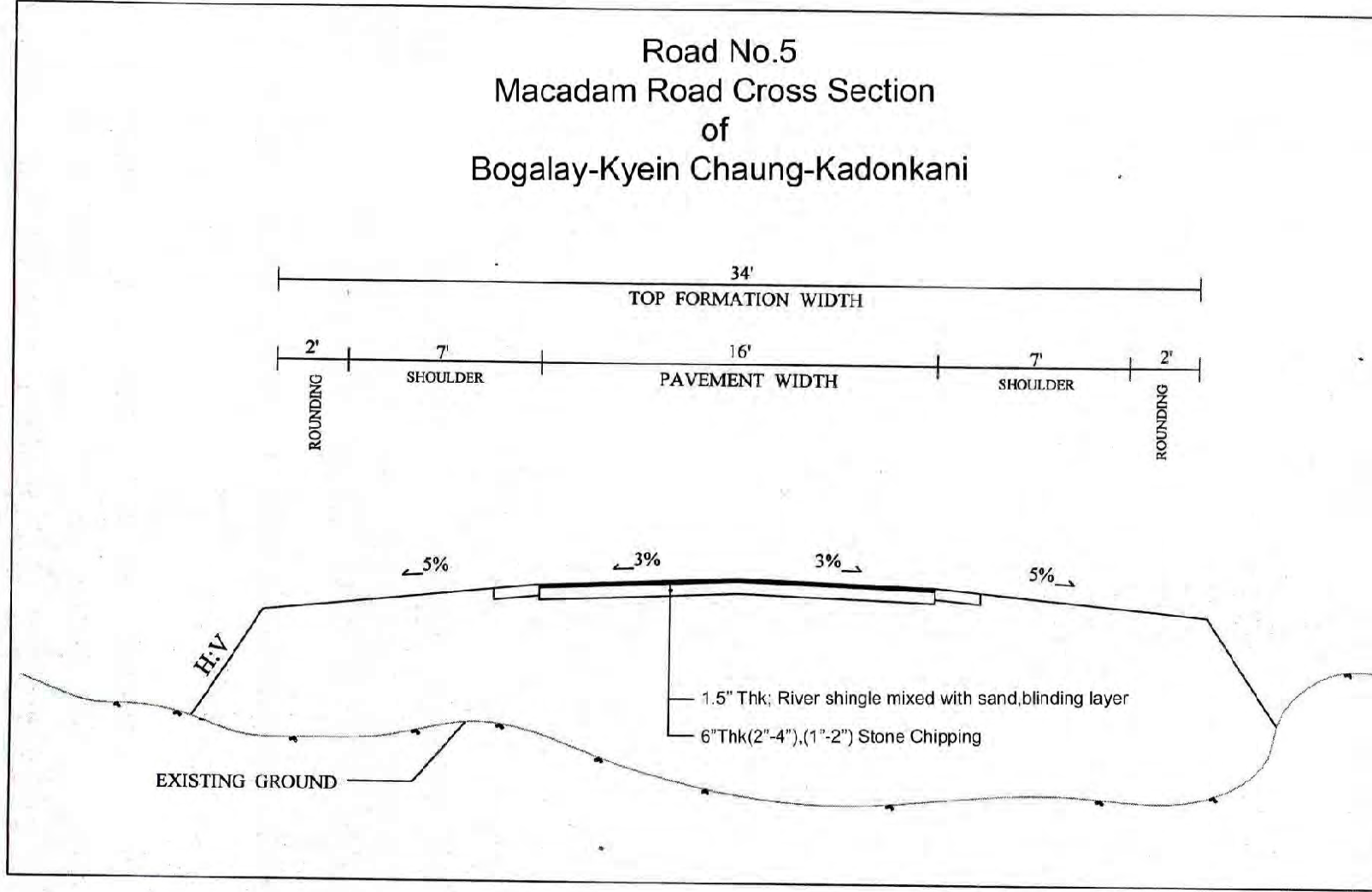
17. Road shoulder - **Type** **Width** **Thickness**  
Earth 3' - 0" same as road
18. Alignment map - Starting point-Mile 0/0-Bokalay--Satsan mile post  
Ending point- Mile 38/5-Bokalay Town (KaDon KaNi)  
Popular Towns on the Road - No
19. Pipe culvert/out let drain **Location** **Type** **Measurement**  
- - -
20. Bridges on the road.

Sr.	Name	No.	Length	Type	Remark
1.	Bogalay River Crossing Bridge	0/0	4400 Ft	Concrete	Under Construction
2.	NyiNaungLay	0/3	36 Ft	Concrete	Existing one
3.	NyiNaungLay	1/1	135 Ft	Timber	Existing one
4.	KaingTawGyi	4/7	400 Ft	Bailey	Constructed
5.	ThaungChaung (1)	6/6	60 Ft	Bailey	Constructed
6.	ThaungChaung (2)	7/0	60 Ft	Bailey	Constructed
7.	PhaLar	7/6	60 Ft	Bailey	Constructed
8.	KyonSein	8/3	60 Ft	Timber	Existing one
9.	SanMaungTuMyaung	9/3	80 Ft	Timber	Constructed
10.	TanThat	10/3	70 Ft	Timber	Constructed
11.	KweLeik	11/5	80 Ft	Timber	Constructed
12.	YaeKyawGouk	12/7	150 Ft	Timber	Constructed
13.	PanPhue	14/7	180 Ft	Timber	Constructed
14.	Bingalar	17/7	17 Ft	Timber	Constructed
15.	NoukPyanHtoe (1)	18/7	90 Ft	Timber	Constructed
16.	NoukPyanHtoe (2)	19/3	90 Ft	Timber	Constructed
17.	NoukPyanHtoe (3)	20/1	90 Ft	Timber	Constructed
18.	KhaYu	20/7	260 Ft	Timber	Constructed
19.	Kyein Chaung	21/7	400 Ft	Bailey	Constructed
20.	UToe	22/6	80 Ft	Bailey	Constructed

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21.	KyuChaung	24/2	60 Ft	Bailey	Constructed
22.	MeTwe Chaung	25/3	260 Ft	Bailey	Constructed
23.	Thidar Chaung	26/1	45 Ft	Pipe Culvert	Constructed
24.	TaDar Chaung	26/5	80 Ft	Pipe Culvert	Constructed
25.	LaMue Kaing	27/0	140 Ft	Pipe Culvert	Constructed
26.	Yoe Chaung (1)	27/5	50 Ft	Pipe Culvert	Constructed
27.	Yoe Chaung (2)	28/6	40 Ft	Pipe Culvert	Constructed
28.	Gwe Chaung Gyi	30/4	180 Ft	Pipe Culvert	Constructed
29.	DaKnow Chaung	31/1	48 Ft	Timber	Constructed
30.	ChaungByaeGyi	34/0	1040 Ft	Concrete	Under Construction
31.	PaukSeinKya	35/6	406 Ft	Bailey	Constructed
32.	Kyaung Chaung	36/6	80 Ft	Bailey	Constructed
33.	YaeKyawGyi	37/2	960 Ft	Bailey	Constructed
34.	DaNe Chaung	38/4	60 Ft	Bailey	Constructed
35.	MaYanChaung	39/3	140 Ft	Bailey	Constructed
36.	GweChaung	39/7	80 Ft	Bailey	Constructed
37.	KaDon Chaung	41/0	260 Ft	Bailey	Constructed

21. Retaining Wall	<b>Wall</b>	<b>Location</b>	<b>Type</b>	<b>Length</b>	<b>Width</b>
	-	-	-	-	-
22. Side Drain-	Left/Right of Road	Length	Width	Depth	Type
	Yes	35 Miles	16 Ft	7 Ft	Earth Canal
23. Geometric Design -	Road up/down rate -	0%			
	Road side slope rate -	4%			



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**Route No.(5),Bogalay - Kyein Chaung - Katon KaNi Road**  
**(Yearly Budget Allotment for Road construction)**

Airport Special Group (2)

(Kyats-Million)

Sr.	Group Name	Project Cost	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	Total Received Fund	Remark
1.	Road Special Group -16	15785.00	1050.00	1360.00	521.40	100.00		3031.40	
2.	Airport Special Group-2						400.00		
							300.00	700.00	
			1050.00	1360.00	521.400	100.00	700.00	3731.40	



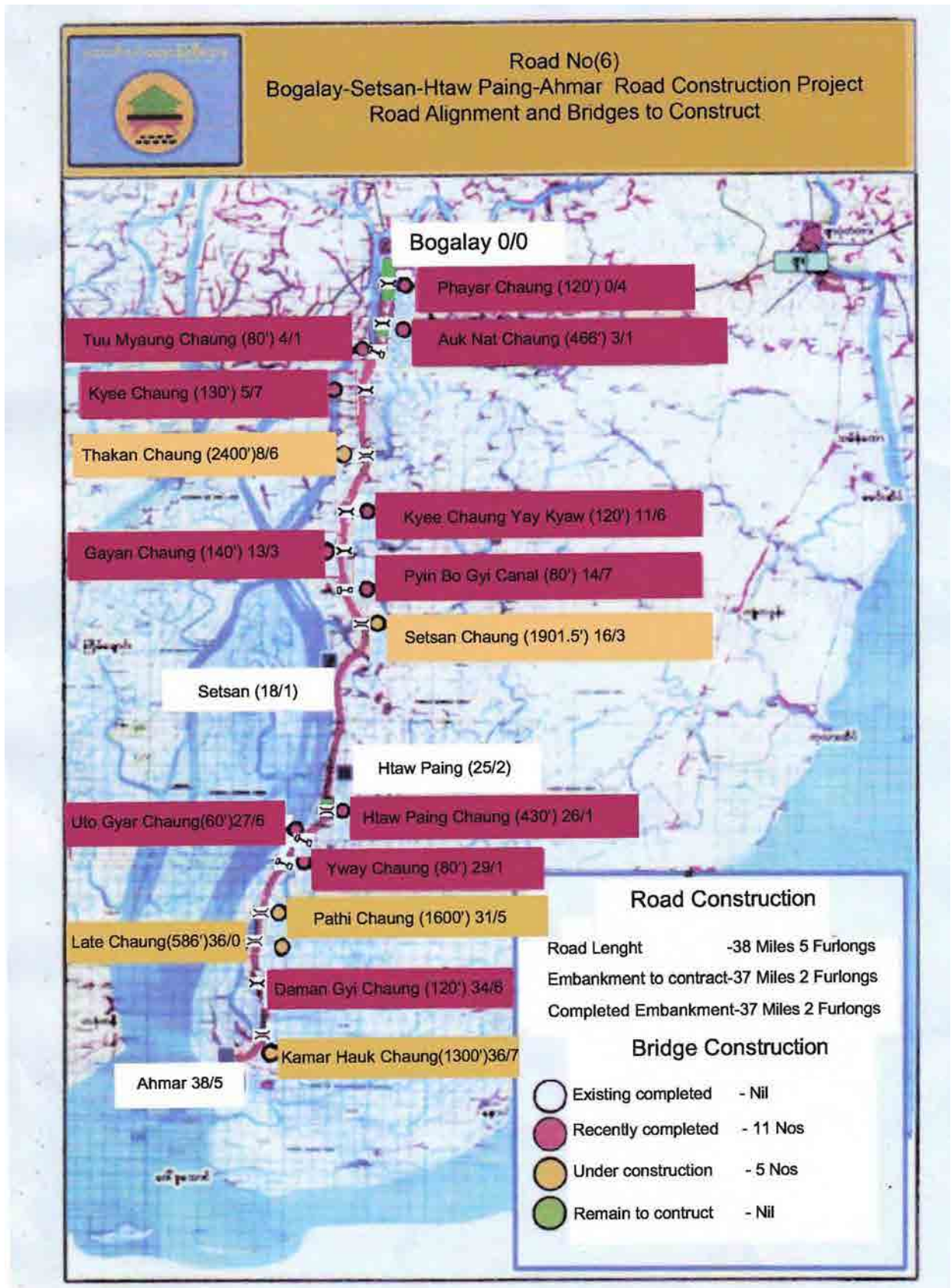
**Route No. (5)Bokalay - Kyein Chaung - Katon Kani Road**  
**Budget Allotment**

Sr.	Budget Year	Permitted Budget (Kyat-Million)	Constructing Group	Task Name	Remark
1.	2008-2009	1050.00	Road Construction Project Special Group (16)	(a)Mile 0/0-22/0 Construction of first step of Earthwork Embankment (b) Mile 22/0-41/1 increased Earth embankment high, construct hill lot, pavement of Macadam Road 2miles, Build water out let drain (culvert) 3units, Build 1(one) unit of 50ft length Timber bridge. (c) Mile6/2-9/4 construction of earth Embankment and construct hill lot.	
2.	2009-2010	1360.00	Road Construction Project Special Group (16)	-Mile 0/0-41/0 earthwork embankment construction, construction of 6miles 1furlong long road with 2"-4" broken stone pavement thickness 6" of 2(two) layer and compacting, construction of pipe culvert.	
3.	2010-2011	521.4	Road Construction Project Special Group (16)	(a)Mile 0/0-41/2 to making earth shoulder with machines. -Mile41/0-41/2 for 2 furlong Earth Filling - construction of 3-bridges and approach Road (Kadon Kani Bridge, Mee Thwe Stream bridge and kyein chaung bridge) (b)Mile5/2+4/0-7/4for 17-38 furlong	

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				<p>construction of unpaved road/stone road with 2''-4'' broken-stone, thickness 6'' and width 16' pavement of 1<sup>st</sup> layer and compacting.</p>
4.	2011-2012	100.00	Road Construction Project Special Group (16)	<p>Bogalay bridge approach road construction with 4-ft height earth filling embankment as first step.</p>
5.	2012-2013	300.00	<input type="checkbox"/>	<p>(a) Mile 7/4-10/2=2mile 6 furlong, width 16ft depth 6'' stone pavement construction.</p>
		100.00	<input type="checkbox"/>	<p>At mile (22/0) approach Road of kyein chaung bridge and at mile (35/6) approach road of Pauk Sein Kya Bridge making Earth Embankment</p>
		300.00	<input type="checkbox"/>	<p>(b)Approach Road of Bogalay bridge making earth embankment.</p>

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Road No(6)  
Bogalay-Satsan-Htaw Paing-Ahmar, Mile (0/0-38/5)=38 Miles 5 Furlong  
Airport Special Group(2)

Road Condition	Bogalay Township Mile- Furlong	Ahmar Sub Township Mile- Furlong	Total Mile- Furlong
Paved Road	-	-	-
Macadam Road	-	-	-
Unpaved Road	3-0	-	3-0
Earth Road	28-4	7-1	35-5



Legend

-  Paved Road
-  Macadam Road
-  Unpaved Road
-  Earth Road

**Road Data**

1. Name of Road - Bogalay- Setsan- Htaw Paing- Ama Length  
Road Length (38 Miles 5 Furlong)
2. Type of Road - Union Highway Road, Route No. (6) of Nargis Road Network.
4. History of the Road -

Apart from 5 road network for development of Ayeyarwady delta area, order given to find road alignment of Bogalay-Setsan-Htaw Paing-Ama road by State Law and Order Restoration Council on 27.12.2008 visit, Bogalay-Setsan-Htaw Paing-Ama road was planned to construct by Ministry of construction and Ma-U-Pin District PWD was assigned for the implementation of the project on 28.1.2009.

Road construction started on 4.2.2009 and on 24.3.2009, Deputy Minister for Ministry of Construction divided road to be completed before rainy season accordingly.

1. Mile 0/0 to Mile 8/6 (Road Construction Special Group-15)
2. Mile 8/6 to Mile 18/1 (Road Construction Special Group-16)
3. Mile 18/1 to Mile 38/5 (Ma-U-Pin District PWD)

A total of 16 bridges located on the road and divided for the construction of bridge as follow;

1. Ma-U-Pin District PWD - 5 Nos. of bridge
2. Bridge Special Group (11) - 2 Nos. of bridge
3. Bridge Special Group (3) - 7 Nos. of bridge
4. Bridge Special Group (4) - 1 Nos. of bridge
5. Bridge Special Group (5) - 1 Nos. of bridge

- Road name - - Road of Bogalay-Setsan-Htaw Paing-Ama  
Road Length - 38 Miles 5 Furlong  
Type of Road - Unpaved Road  
Starting date - (4.2.2009)

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Constructed by - (1) Road Construction Special Group (15)  
Mile 0/0 to 8/6 (8 Miles 6 Furlong)  
(2) Road Construction Special Group (16)  
Mile 8/6 to 18/1 ( 9 Miles 3 Furlong)  
(3) PWD, Maubin District.  
Mile 18/1 to 38/3 (20 mile 4 Furlong)

Expenditure used - 2098.2275 Million (For Road)  
3085.9070 Million (For bridge)  


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5184.1385 Million

	<u>Budget year</u>	<u>Kyat (Million)</u>
<u>Road Work</u>		
	2009-2010	592.20 (Maubin District) 400.00 (Road Special Group-15) 440.00 (Road Special Group-16)
	2010-2011	272.95 (Maubin District) 64.55 (Road Special Group-15)
	2011-2012	92.5215 (Maubin District)
	2012-2013	73.91 (Maubin District) 226.09 (Airport Special Group-2)
		<hr/> 2162.2275
	<u>Budget year</u>	<u>Kyat (Million)</u>
<u>Bridge Work</u>		
	2009-2010	273.00 (Maubin District) 624.50 (Bridge Special Group-3)
	2010-2011	159.89 (Maubin District) 539.00 (Bridge Special Group-3) 231.85 (Bridge Special Group-11) 50.00 (Special Project S.G -3) 50.00 (Special Project S G 5)

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		50.00 (Special Group for Bridge - 4)
2011 - 2012	57.767	(Maubin District)
		559.900 (Special Group for Bridge - 3)
2012-2013	150.000	(Special Group for Bridge - 3)
		300.000 (Special Implementation Plan - 5)

**3085.907**

Geographical Position-	Delta region of Faltland Area	
5. Milestone Starting - Town/Village	Mile 0/0	Bokalay Town (Junction) of Bogyoke Road and 18th Street,
6. Ending of Milestone -	Mile 38/5	Ahmar Sub-Township
7. The Road crossing at - Town/Village	1.	Payar Chaung Village Mile 0/4
	2.	Mya Thein Tan Village Mile 3/1
	3.	KanGone Village Mile 4/1
	4.	Leikkabar Village Mile 5/3
	5.	Ohnpin Su Village Mile 5/5
	6.	Pattamyar Gone Village Mile 8/4
	7.	Thar Pyan Gyi Village Mile 10/0
	8.	Zephyu Village Mile 11/7
	9.	KanazoNgu Village Mile 15/0
	10.	Setsan Village Mile 18/1
	11.	Thukhawati Village Mile 12/0
	12.	Sein Yati Village Mile 12/4
	13.	Asilay Village Mile 22/0
	14.	Asigyi Village Mile 22/4
	15.	Ohnpin Su Village Mile 23/5
	16.	Mingalar Yaekyaw Village Mile 24/1
	17.	HtawPaing Village Mile 25/2
	18.	TikeSeinGone Village Mile 26/0
	19.	GoneTanPouk Village Mile 27/1
	20.	Ywae Chaung Village Mile 28/2
	21.	Damin Naung Village Mile 29/2
	22.	Lyaw Chaung Village Mile 29/7
	23.	Pati Chaung Village Mile 30/1

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	24.	Oakpon Village	Mile 32/2		
	25.	Lake Chaung Village	Mile 32/6		
	26.	Khamigyí Chaung Wa Village	Mile 34/2		
	27.	Khamigyí Kone Tanpaunk Village	Mile 34/3		
	28.	Zee Kone Tan Village	Mile 34/6		
	29.	Khamilay Chaung Wa Village	Mile 35/6		
	30.	Pagan Village	Mile 35/7		
	31.	Aung Kone Village	Mile 36/1		
	32.	Thayet Chaung Village	Mile 36/4		
	33.	Lay Pay Chaung Village	Mile 36/5		
	34.	Ah Mar Sub Township	Mile 38/5		
8. Border		- Bogale Township/Ahmar Sub Township			
9. Road Construction Materials		- Sand			
Location		- Bogalay Mile 0/0			
Qty		- Enough for road construction			
Access from road		- 3 mile (All weather road)			
10. Mile post		- No.			
11. Furlong post		- Yes (Concrete)			
12. Road boundary post		- Yes (Concrete)			
13. Type of road	Paved	Macadam	Unpaved	Earth	Remark
Length	-	-	3M, 0F	35M, 5F	38M, 5F
Width	-	-	16-ft	34-ft	
14. Formation width		- Earth Embankment – 34-ft width			
15. Embankment height		- 6-ft			
16. Road Cross Section		- Attached			
17. Road Shoulder		Type	Width	Thickness	
		Earth	3-ft	Same as road thickness	
18. Road alignment map		starting point – mile 0/0 – Bogyoke road and No.18 road			
		Ending point – mile 38/5- Ama Sub Township			
		Popular Towns along the Road	-	No	
19. Pipe culvert/ out let drain-					
	<b>Location</b>	<b>Type</b>	<b>Measurement</b>		
	Mile 10/4	Concrete pipe	3'Ø x 1 Pcs		
	Mile 38/2	Timber box	6' x 6'		
	Mile 38/2	Timber box	6' x 6'		



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20. List of Bridges along the Road

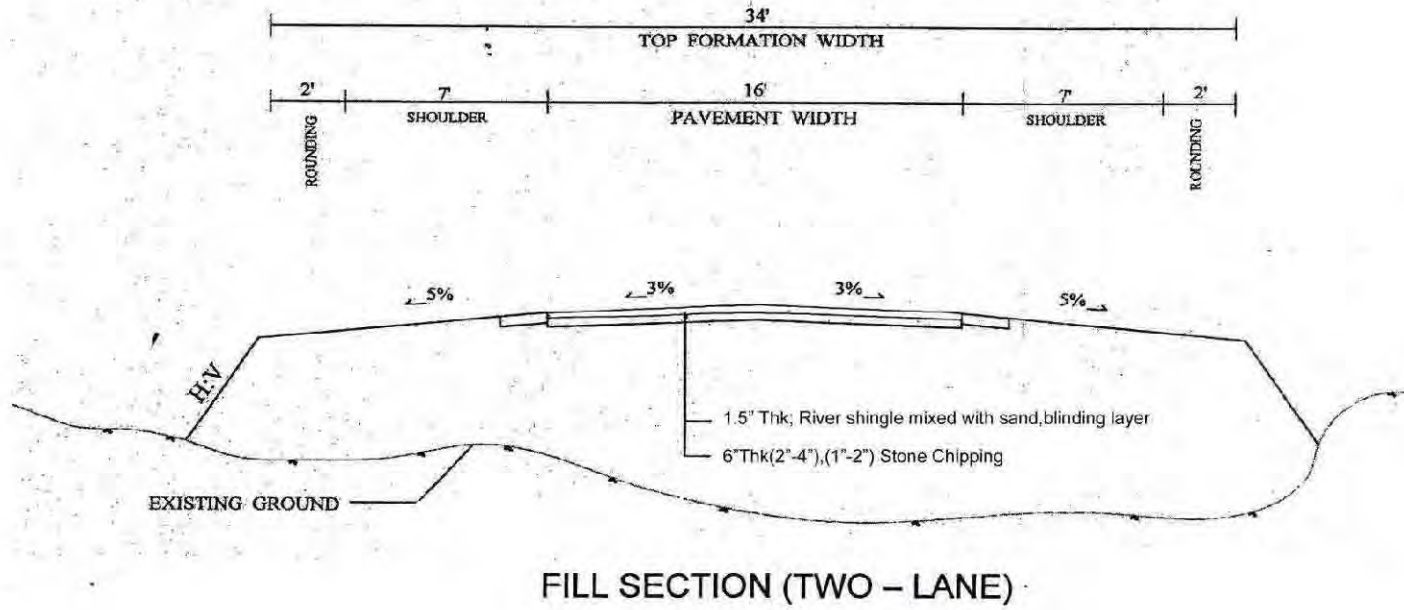
Bridge Name	No.	Length	Width	Type	Constructe d Year	Load Limit
Payar Chaung	1/1	120'	12'-4"	RSJ+Timber	2009	13 Ton
AuknatChaung	1/4	466'	13'-6"	Bayli+Timber	2010	13 Ton
TueMyaung Chaung	1/5	80'	12'-4"	Bayli+Timber	2009	13 Ton
Kyee Chaung	1/6	130'	12'-4"	RSJ+Bayli Timber	2009	13 Ton
Thakan chaung	1/9	2400'	24'-0"	RSJ+Slab RC Girder Plate Girder	2011	under construction
Kyee chaung Over Bridge	1/12	120'	12'-4"	RSJ+Timber	2009	13 Ton
Gayan chaung	1/14	140'	12'-4"	RSJ+Bayli Timber	2009	13 Ton
PyinBoGyi	1/15	80'	12'-4"	RSJ+Timber	2009	13 Ton
Setsan chaung	1/17	1901.5'	24'-0"	RC+Slab RC Girder Plate Girder	2011	under construction
Htaw Paing chaung	1/27	430'	13'-6"	Bayli+Timber	2009	13 Ton
U To Kyar chaung	1/28	60'	12'-4"	RSJ+Timber	2009	13 Ton
Ywae chaung Bridge	1/30	80'	12'-4"	RSJ+Timber	2009	13 Ton
Pati chaung Bridge	1/32	1600'	24'-0"	RC+Slab RC Girder Plate Girder	2011	under construction
Leik chaung Bridge	1/34	586'	13'-6"	Bayli+Timber	2009	13 Ton
KhaMeGyi chaung	1/35	120'	12'-4"	RSJ+Bayli Timber	2009	13 Ton
KamarHoukchaung Bridge	1/37	1300'	24'-0"	RC+Slab RC Girder	2011	under construction

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21.	Earth Hold Wall (Retaining Wall)	Location	Type	Length	Width	
22.	Road Side Drain	-				
	<u>Left/Right of Road</u>	<u>Length</u>	<u>Width</u>	<u>Depth</u>	<u>Type</u>	
	Yes	18 Miles 5 Furlong		17 Ft	6 Ft	Earth Drain
23.	Geometric Design	-	Road up/down		- 0%	
			Side Slope rate of Road		- 6%	

**Road No(6)**  
**Bogalay-Setsan-Htaw Paing-Ahmar Road Section (Macadam Road)**

**TYPICAL CROSS SECTION**



**Road of Bogalay - Setsan - Htaw Paing – Ama Road**

**(Yearly Budget)**

Airport Special Group (2)

(Kyat - Million)

Sr.	Group Name	Project(Cost	2009-2010	2010-2011	2011-2012	2012-2013	Total Received Donation	Remark
	Maubin District	11803.80	592.20	208.95	92.5275	73.91	967.5875	Not including Mineral Asphalt
	Road of Special Group(15)		400.00	64.55			464.5500	
	Road of Special Group (16)		440.00				440.0000	Road
	Airport Special Group (2)					226.09	226.0900	
	<b>Total</b>		<b>1432.20</b>	<b>273.50</b>	<b>92.5275</b>	<b>300.00</b>	<b>2098.2275</b>	

**Bogalay - Setsan - Htaw Paing – Ama Road**

**(Yearly Budget)**

<b>Sr .</b>	<b>Budget Year</b>	<b>Budget</b>	<b>Constructed by</b>	<b>Business Name</b>	<b>Remark</b>
1.	2009-2010	400.00	Road Construction Project Special Group (15)	(A)Mile from 0/0 to 8/6, Raised ground frame limit (Earth Filling) (Formation) width - 22 Ft, Height 4 Ft Mile 0/0-8/6, Raised ground fame limit (Earth Filling) (Formation) Width - 30 Ft, Height - 4 Ft Mile from 0/0 to 8/6, Standard reach raised ground fame limit (Earth Filling) (Formation) with 34 Ft, average height 8Ft for Payar Stream, Nat Stream, Too Myaung Stream, Kyee Stream, Thakan Stream, approach road Earth Filling, Yoe Stream, Kywee Stream, Yoe Khaung Gyi, KharPat Canal, block drain and earth filling. (B) Mile from 0/0 to 8/6 filling side slope, adjusting road surface, smoothing and grinding,	
	2010-2011	64.55			Width 34 Feet for standard raised ground frame limit earth filling,
2.	2009 - 2010	440.00	Road Construction Special Project Group (16)	8/6-8/1 mile (9 mile 3 furlong) establish to 3" ø Pipe Culvert	

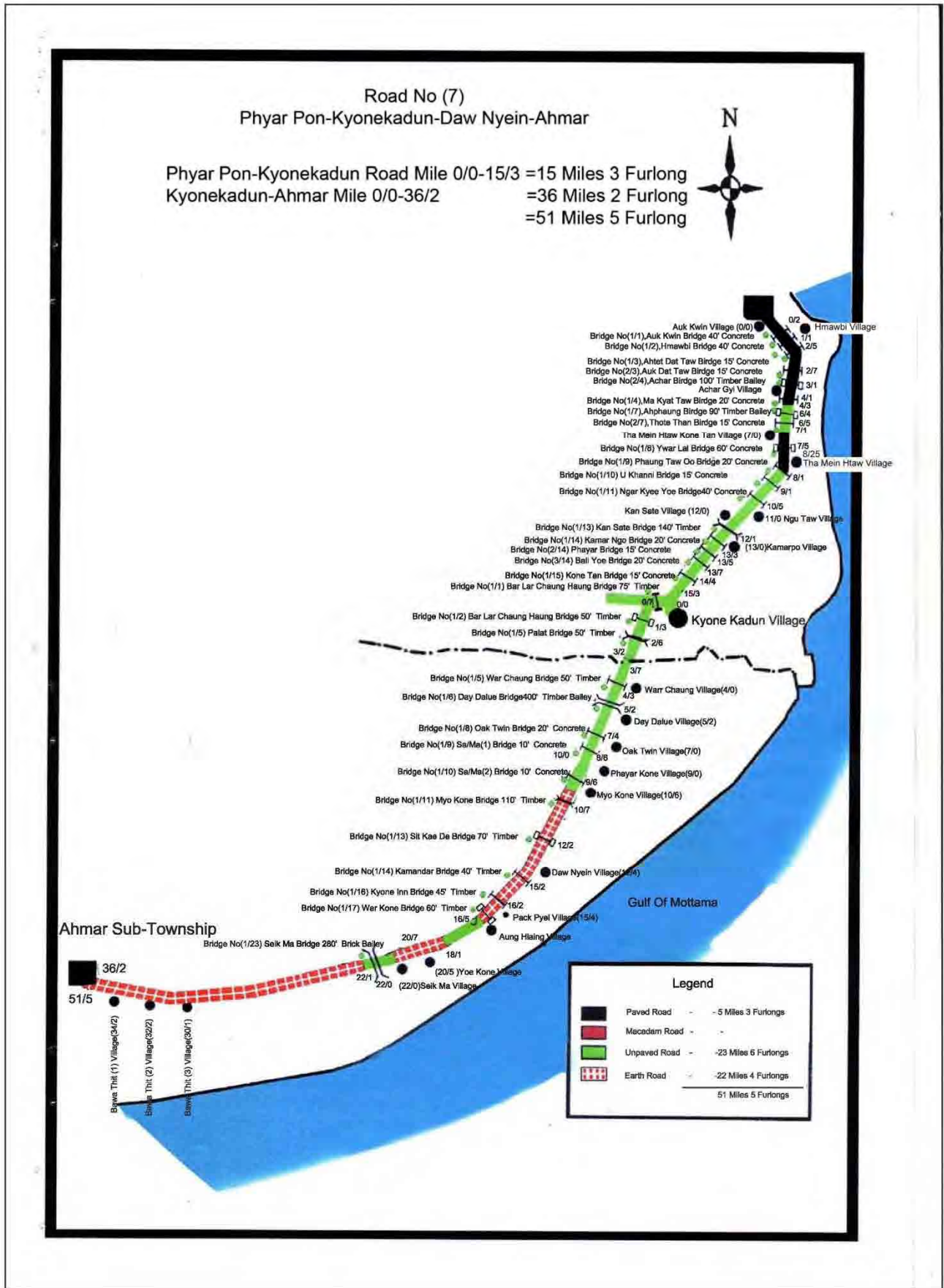
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3.	2009-2010		Maubin District	- For mile from 25/5 to 33/0 (7miles 3 furlong) raised ground Earth Filling Width 22' and Height 6'	
		4297.00		<input type="checkbox"/>	For mile from 33/0 to 38/5 (5 miles 7 furlong) raised ground (Earth Filling) Width 34 Ft and Height 4'
		1625.00 (Additional)		<input type="checkbox"/>	- For mile from 25/2 to 33/0 (7 miles 3 furlong) high raised ground (Earth Filling) Width 34' Height to high 6' and Width 12', Height 6'
	2010-2011	1235.00		<input type="checkbox"/>	Mile from 20/0 to 22/0(9900 Ft) raised ground (Earth Filling) Width 34' and Height 8' from 20/0 to 22/0 (10560 Ft) raised ground (Earth Filling) Width 34' and Height 6'.
	2011-2012	214.50	<input type="checkbox"/>	- For mile from 22/0 to 25/5 (4 mile) raised new earth ground (Earth Filling) Width 34', Height 6' and mile from 25/5 to 26/2 to raised high ground (Earth Filling) Width 34' and Height 6' to 8'.	
	2011-2012	640.00	<input type="checkbox"/>	-For mile between 23/1-24/4 (1mile 3 furlong) raised ground (Earth Filling) Height 6' to 8'. -Road of Bogalay - Setsan - Htaw Paing - Ama - mile from 26/2 - 26/4 and 29/2 - 29/7 (7 Furlong) raised high earth ground (Earth Filling) Height 6' to 8'. Mile from 33/1 to 36/3 (3 miles 5 furlong) raised high earth ground (Earth Filling) Height 4' to 6'.	

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4.	2011-2012	30.00	Maubin District	-Between mile 23/0 and 3/3 – stone surfacing and compaction was done for 2.3 furlong length,16 width and 6-in thick sub-base first layer.
	<input type="checkbox"/>	46.32	<input type="checkbox"/>	-Road construction was done between mile 0/0 to 3/0 for Auk net chaung bridge opening ceremony
	<input type="checkbox"/>	12.33375	<input type="checkbox"/>	-Between mile 0/0 to 31/5 - repairing and maintenance
	<input type="checkbox"/>	2.19375	<input type="checkbox"/>	-Between mile 31/5 to 38/5 - repairing and maintenance
	<input type="checkbox"/>	1.680	<input type="checkbox"/>	-Between mile 18/0 to 21/0 – earthwork leveling
	2012-2013	73.91		-Between mile 0/1 to 1/0 (7 furlong) – 8-ft width, 6-inches thick stone laying
		226.09	Airport Special Group-2	-Between mile 26/0 to 26/3 (3 furlong) – 16-ft width, 6-inches thick stone laying
				-Between mile 0/0 to 2/2 (2 mile 2 furlong) – 16-ft width, 6-inches thick stone laying
				-Between mile 10/6 to 13/1 and 20/0 to 22/5 (5 mile) – Embankment construction

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**Detail information of the Road**

1. Name of Road - Phyarpon-Kyunkadun- Daw Nyein-Ama
- Length of Road - Mile from (0/0)to (15/3) 15.miles and 3 Furlong (Part of Phyarpon-Kyunkadun Road)
- Mile from (0/0) to (36/2) 36 miles 2 Furlong (Part of Kyunkadun-Ahmar Road)
- Total Length of Road - 51 miles and 5 Furlong
2. "KA" listed registered Road- Not yet "A" Listed
3. Type of Road (Union Highway) -No. (3), Main cross Road
4. History of Road - **Phyarpon- Kyunkadun**
- Constructed year (1973-1974)
- Constructed Organization - Earth Road (by Peoples' services)
- On (1995-1996) - Unpaved Road by (PWD)

**Road of Kyunkadun- Ama**

- Constructed Year 1992
- Constructed Organization- Earth Road by People's Services
- In 1995-96- Unpaved Road by (PWD)
- Budget used ( Kyats) 1725.713 Lakhs (for Road) 50.50 Lakhs (for bridge)

<b><u>Budget year</u></b>	<b><u>Road</u></b> <b>Kyat (million)</b>	<b><u>Bridge</u></b> <b>Kyat (million)</b>
(1973-74)	2.3	
(1978-79)	1.013	
(1986-87)	0.3	
(1990-91)	0.5	
(1991-92)	0.5	
(1992-93)	1.0	
(1993-94)	2.0	

**The Project of Site Survey For Roads in Ayeyarwady Region  
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(1994-95)	1.5	
(1995-96)	5.0	
(1996-97)	6.0	
(1997-98)	2.0	
(1998-99)	1.0	
(2000-01)	5.0	
(2001-02)	11.0	
(2002-03)	10.0	
(2003-04)	5.0	
(2004-05)	72.0	
(2005-06)	30.0	
(2006-07)	153.0	
(2007-08)	8.6	
(2008-09)	80.0	10.0(SaMa-1)
305.0 (Shwe War Linn Co.ltd)		
(2009-10)	224.0	
(2010-11)	142.0	15.0(Oaktwin)
		12.0(SaMa-2)
13.5(Foudtawoo)		
(2011-12)	180.0	
(2012-13)	477.0	
—————→		
Total	1725.713	50.5

**-Geographic Condition-Flatland**

5. Starting of Mile post -Oaktwin village 0/0 Mile (Phyarpon Township)
6. Ending of Mile post -Ama Township 51/5 Mile (Ama Township)
7. Village and Township
 

around the road	-Mawbe	Mile (1/1)	(Phyarpone Township)
	-Aungtharyar	Mile (3/1)	(Phyarpone Township)
	-Thamainhtaw	Mile (7/0)	(Phyarpone Township)
	-Thamainhtawtheingone	Mile (8/0)	(Phyarpone Township)

**The Project of Site Survey For Roads in Ayeyarwady Region  
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-Ngutaw	Mile (11/0)	(Phyarpone Township)
-Kansate	Mile (12/0)	(Phyarpone Township)
- Kamarpo	Mile (13/0)	(Phyarpon Township)
- Kyunkadun	Mile (15/3)	(Phyarpon Township)
- Warchaung	Mile (4/0)	(Ama Sub-Township)
- Daydalu	Mile (5/2)	(Ama Sub-Township)
- Myo Gone	Mile (10/6)	(Ama Sub-Township)
- Daw Nyein	Mile (12/4)	(Ama Sub-Township)
-Aung Hlaing	Mile (16/5)	(Ama Sub-Township)
-Yoe Gone	Mile (20/5)	(Ama Sub-Township)
- Seikma	Mile (22/0)	(Ama Sub-Township)
- Bawathit (3)	Mile (30/1)	(Ama Sub-Township)
- Bawathit (2)	Mile (32/2)	(Ama Sub-Township)
- Bawathit (1)	Mile (34/2)	(Ama Sub-Township)

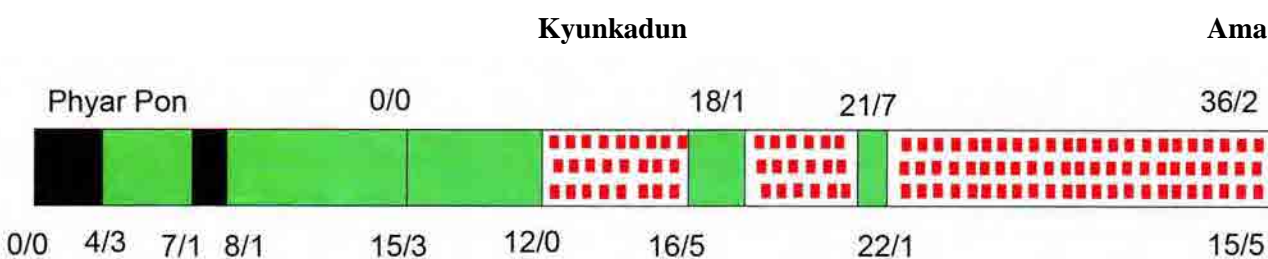
8. Borders
- Mile 0/0 Auk Kwin Village (Phyarpon Township, Phyar District, Ayarwady Ragon Division.)
  - Mile 51/5 Ama Township (Ama Sub-Township, Phyarpon District, Ayarwady Region Division.)

Phyarpon District, Ayarwady Region Division.)

9. Road construction materials - Nil

Approximate amount/ condition

- |                        |   |                                                      |
|------------------------|---|------------------------------------------------------|
| 10. Mile post          | - | Have (Concrete)                                      |
| 11. Furlong post       | - | Have (Concrete)                                      |
| 12. Road boundary post | - | Have (Concrete)                                      |
| 13. Type of Road       | - | <b><u>Paved Macadam Unpaved Earth Total</u></b>      |
| Length (Mile)          | - | 5 miles 3 Furlong - 23miles 22 mile 51mile           |
|                        |   | 6Furlong 4Furlong 5Furlong                           |
| Width                  | - | 12' (Paved road)/15'(Macadam Road) / 30'(Earth Road) |



**The Project of Site Survey For Roads in Ayeyarwady Region  
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14. Formation width - 30ft

15. High of Embankment - 4ft (average)

16. Cross section of Road -

<u>- Wearing course</u>	<u>Type</u>	<u>Width</u>	<u>Thickness</u>
-	Paved road	12'	1 1/2'

<u>- Base Course</u>	<u>Type</u>	<u>Width</u>	<u>Thickness</u>
Base Course	Macadam road	12'	3"
1st Layer			
Base Course	Macadam Road	12'	3"
2nd Layer			

<u>-Sub-Base Course</u>	<u>Type</u>	<u>Width</u>	<u>Thickness</u>
Sub-Base Course	Macadam Road	16'/12'	4"
1st Layer			
Sub-Base Course	Macadam Road	16'/12'	4"
2nd Layer			

17. Shoulder	-	<u>Type</u>	<u>Width</u>	<u>Thickness</u>
		Earth (soil)	3'	6"

18. Map of Road alignment - Road starting place  
Mile (0/0) Auk Kwin village,Phyarpon Town  
Place of Road end, Mile (51/5) Ama Sub-Township.

19. Pipe Culvert / Outlet drain - No.

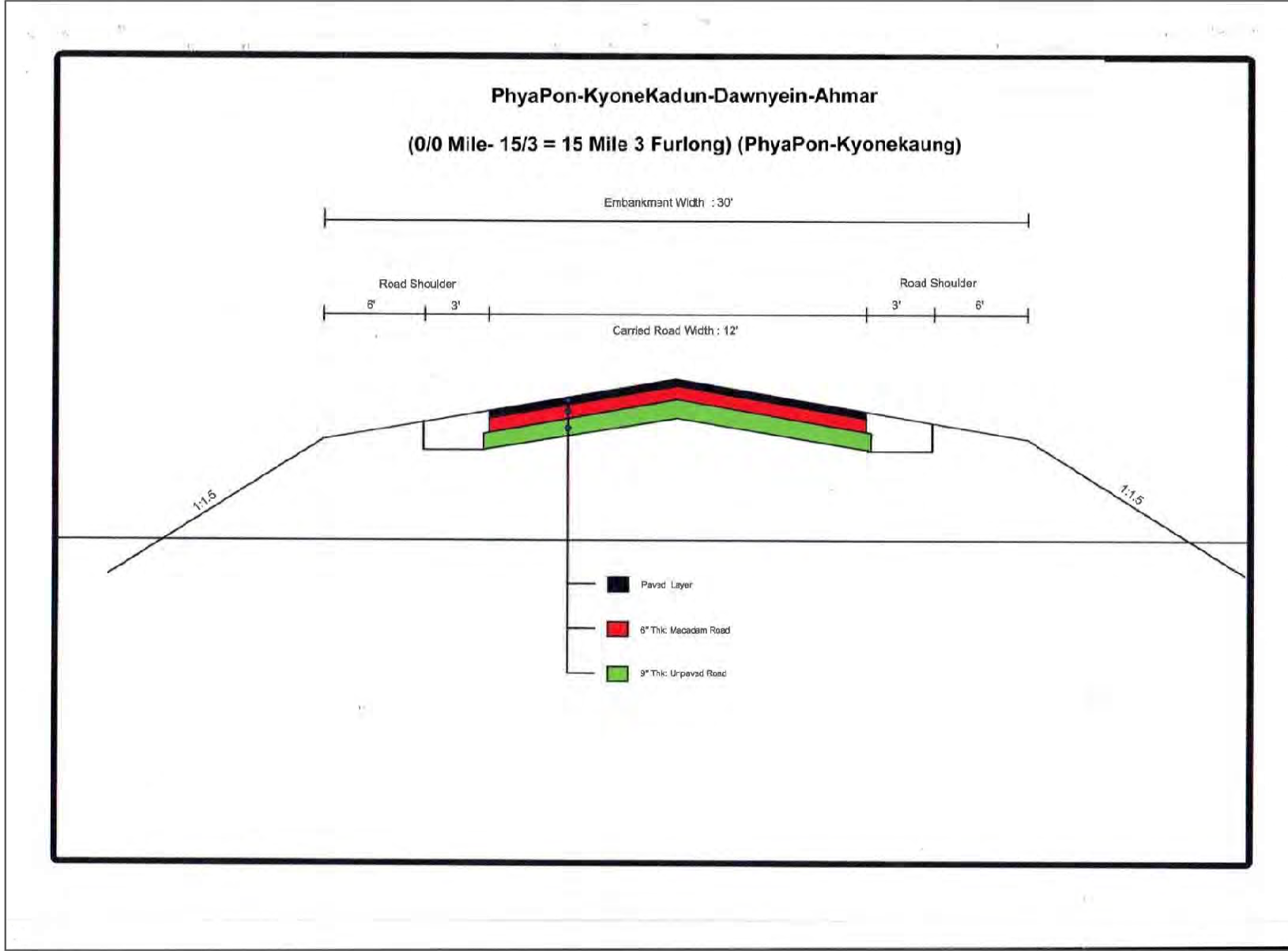
20. List of bridges on the Road

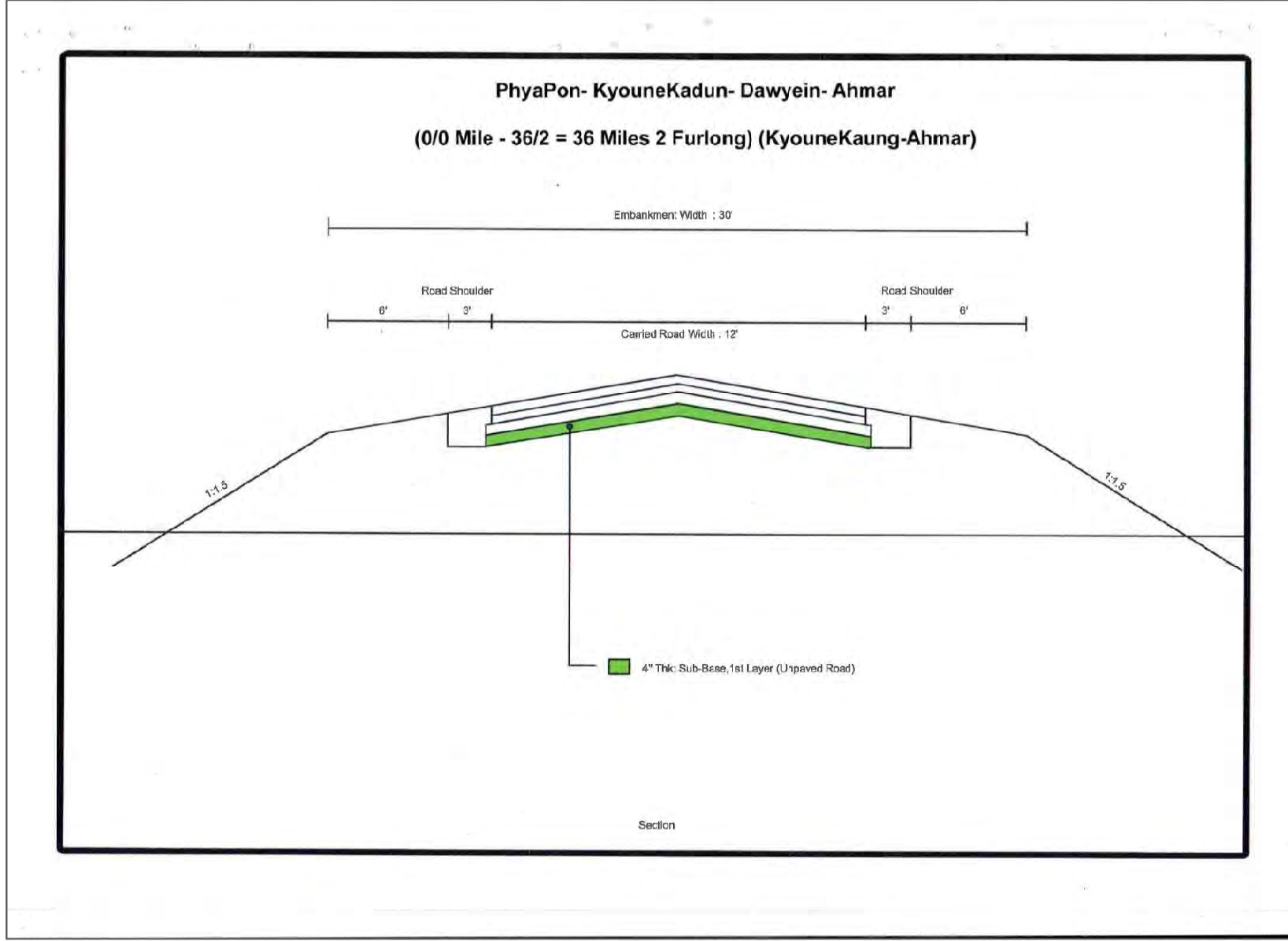
Sr.	Name	No.	Mile Stone	Length	Width	Type	Constructed Year	Load limit
Section of Phyarpon-Kyunkadun								
1.	Auk Kwin	1/1	0/2	40'	14'	Concrete	1935	10 Ton
2.	Hmawbe	1/2	1/1	40'	14'	Concrete	1935	10 Ton
3.	Upper Dattaw	1/3	2/5	15'	14'	Concrete	1935	10 Ton
4.	Lower Dattaw	2/3	2/7	15'	14'	Concrete	1935	10 Ton
5.	Ahchar	1/4	3/1	110'	12'	Bailey	1935	8 Ton
6.	MaKyattaw	1/5	4/1	20'	14'	Concrete	1935	10Ton
7.	Ahphaung	1/7	6/4	130'	12'	Bailey	1935	8Ton
8.	ThuThan	2/7	6/5	15'	14'	Concrete	1935	10Ton

The Project of Site Survey For Roads in Ayeyarwady Region  
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9.	Ywarley	1/8	7/5	60'	12'	Concrete	1935	8Ton
10.	Foundtawoo	1/9	7/8	20'	20'	Concrete	2010	10Ton
11.	Ookenni	1/10	9/1	15'	14'	Concrete	1935	10Ton
12.	Ngargeyoe	1/11	10/5	40'	20'	Concrete	1935	10Ton
13.	Kansate	1/13	12/1	140'	12'-6''	Wooden	1935	6Ton
14.	Kamapo	1/14	13/3	20'	20'	Concrete	1935	10Ton
15.	Phayar	2/14	13/5	15'	20'	Concrete	1935	10Ton
16.	Beleyoe	3/14	13/7	20'	20'	Concrete	1935	10Ton
17.	Koneten	1/15	14/4	15'	20'	Concrete	1935	10Ton
Section of Kyunkadun -Ahmar								
18.	Barlar canal	1/1	0/7	50'	12'-6''	Wooden	1997	6Ton
19.	Barlarchaunghown	1/2	1/3	75'	12'-6''	Wooden	1997	6Ton
20.	Falet	1/3	2/6	125'	12'-6''	Wooden	1997	6Ton
21.	Warchaung	1/5	4/3	50'	12'	Wooden	1992	6Ton
22.	Daydalu	1/6	5/2	400'	10'-2''	Bailey	1997	13Ton
23.	Oaketwin	1/8	7/4	20'	13'-6''	Concrete	1992	10Ton
24.	Elevation department (1)	1/9	8/6	10'	13'-6''	Concrete	1992	13Ton
25.	Elevation department (2)	1/10	9/6	10'	13'-6''	Concrete	1992	6Ton
26.	Myoegone	1/11	10/7	140'	13'-6''	Wooden	1992	6Ton
27.	Sitkelde	1/13	12/2	70'	13'-6''	Wooden	1992	6Ton
28.	Kamantar	1/14	13/2	40'	13'-6''	Wooden	1992	6Ton
29.	Kyuninn	1/16	15/2	45'	13'-6''	Wooden	1992	6Ton
30.	Wargone	1/17	16/2	60'	13'-6''	Wooden	1992	6Ton
31.	Satema	1/23	22/0	280'	13'-6''	Wooden	1997	13Ton

21. Retaining wall - Location Type Length Width
22. Road side drain - Both side of road Length Width depth Type
23. Geometric Design - No.





The Project of Site Survey For Roads in Ayeyarwady Region  
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**Route No. (8)**

**Kyunkadun-Setsan Road**

**Mile 0/7-20/0 (19 miles 1 Furlong)**

1. Bogalay Township (15 miles 4 Furlong)
2. Phyarpon Township (3 miles 5 Furlong)
3. Setsan Village
4. Kyunkadun Village
5. Mottama Gulf
6. Ka Tha Myin Village Mile (13/0)
7. Mile (12/1) Bridge No. (1/13) Ka Tha Myin bridge (110') R.S.J+ Timber
8. Mile (11/2) Nga Pyay ma Village
9. Mile (8/8) Pyin Boe Gyi Village
10. Mile (7/6) Thagin Gone Village
  
11. Mile (6/4) Kha Naung Village
12. Mile (4/4) Bridge No. (2/5) Kan Gyi bridge (86') Timber
13. Mile (4/3) Bridge No. (1/4) 7 mile bridge (78') Timber
14. Mile (4/0) Bridge No. (2/3) Ngagwa bridge (50') Timber
15. Mile (3/7) Bridge No. (1/3) Danbaluu bridge (36') Timber
16. Mile (3/0) Bridge No. (2/2) Yae Ngan Yoe bridge (50') Timber
17. Mile (1/4) Bridge No. (1/2) Kazun Yoe bridge (20') Timber
18. Mile (16/2) Paung Te Village
19. Mile (15/0) Daung Gyi Village

**Legend (Type of Roads)**

a. Mineral asphalt Road	-	-
b. Macadamised Road	-	-
c. Solid (Hard) Road	-	4Miles 4 Furlong
d. Earth (Texture of soil) Road	-	14 Miles 5 Furlong
		<hr/>
		19 Miles 1 Furlong

**Road Data**

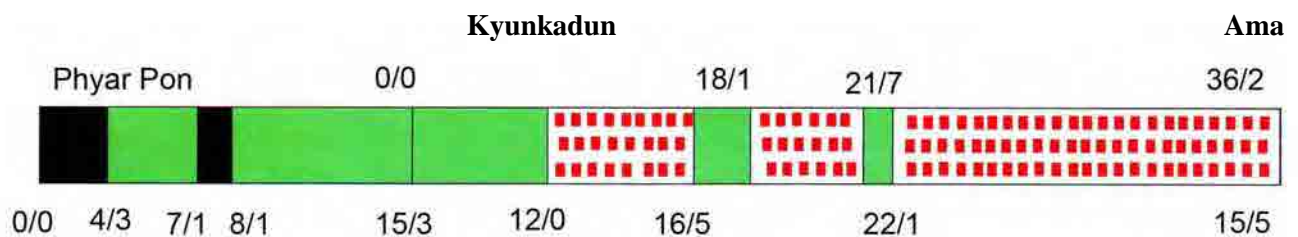
1. Road name - Kyunkadun-Setsan Road
- Length of Road - 0/7 to 20/0- 19 miles 1 Furlong
2. "Ka" List Registered Road - Not Yet
3. Type of Road - Union Highway Road
4. History of the Road - Constructed on-1992
- Constructed by - Earth Road (Community)
- Macadam Road (Pa. Hsa.Ng/ PWD)
- Expenditure used Kyat 944.9million (For Road)
- Kyat 120.0 million (For Bridge)

<b>Budget year</b>	<b><u>Road</u> Kyat (million)</b>	<b><u>Bridge</u> Kyat (million)</b>
1995-1996	1.0	-
1996-1997	1.0	
1997-1998	1.0	
2000-2001	5.0	
2008-2009	30.0	
2009-2010	87.4	46.5
		(Ka Tha Myin)
2010-2011	201.5	73.5
		(Ka Tha Myin)
2011-2012	50.0	
2012-2013	568.0	
	944.9	120.0

- Geographical condition - Flat Land Area
5. Mile post starting Town/Village - Kyunkadun Village Mile (0/7) (Phyarpon Town)
  6. Mile post ending Town/village - Satsan Village Mile (20/0) (Bokalay)

**The Project of Site Survey For Roads in Ayeyarwady Region  
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7. The Road crossing at Town/ Village Rivers, Streams -
- Kyunkadun Village Mile (0/7) (Phyarpon Town)
  - Kan Gyi Village Mile (4/4) (Bokalay Town)
  - Kha Naung Mile (6/4) (Bokalay Town)
  - Thazin Gone Mile (7/6) (Bokalay Town)
  - Pyinbo Gyi Mile (8/8) (Bokalay Town)
  - Nga Pyay Ma Village Mile (11/2) (Bokalay Town)
  - Ka Tha Myin Mile (13/0) (Bokalay Town)
  - Daung Gyi Mile (15/0) (Bokalay Town)
  - Paung Te Mile (18/2) (Bokalay Town)
8. Borders -
- Mile (0/7) Kyunkadun Village (Phyarpon Township)
  - Mile (20/0) Setsan village (Bogalay Township)
9. Construction Materials - No
10. Mile post - Yes (concrete)
11. Furlong post - Yes (concrete)
12. Road boundary post - Yes (concrete)
13. Type of Road - **Paved**      **Macadam**   **Unpaved**      **Earth**      **Total**
- Length (mile)      -      -      4 M 4 F      14 M, 5 F      19 M, 1F
- Width      -      -      12'(Unpaved Road)      30' (Earth Road)



**The Project of Site Survey For Roads in Ayeyarwady Region  
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14. Formation Width - 30ft  
 15. Embankment Height - 4ft (average)  
 16. Road Cross section -

- wearing course                      Type                      Width                      Thickness

- Base Course                      Type                      Width                      Thickness

Base Course

1st Layer

Base Course

2nd Layer

-Sub-Base Course                      Type                      Width                      Thickness

Sub-Base Course                      unpaved Road                      16'                      4"

1st Layer

Sub-Base Course                      unpaved Road

2nd Layer

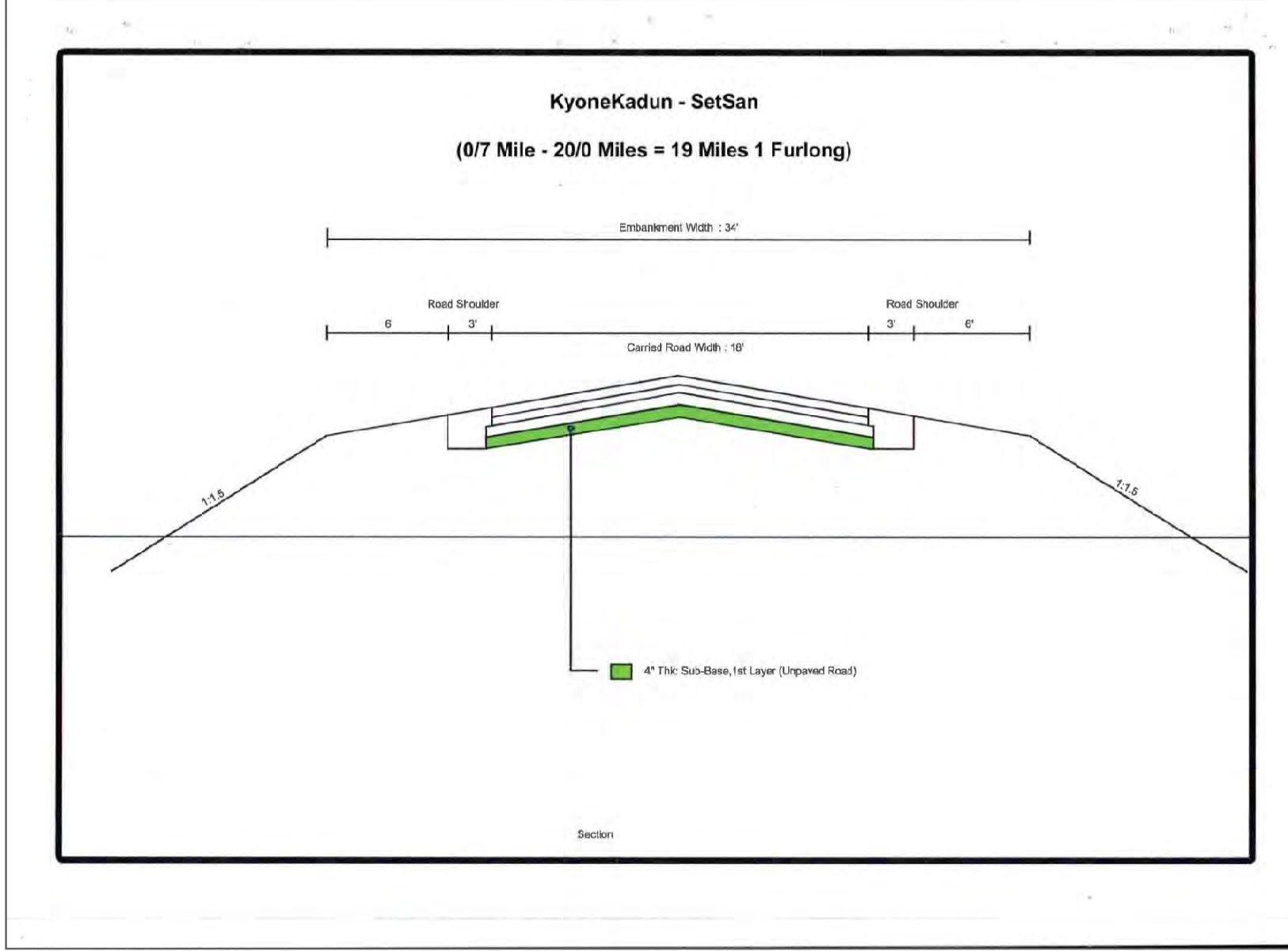
17. Road shoulder -                      Type                      Width                      Thickness

Earth (soil)                      3'                      6"

18. Road alignment Map - Road starting point  
 Mile (0/0) Auk Kwin village,Phyarpon Town  
 Road ending point, Mile (51/5) Ahmar Sub-Township.  
 There are no popular town

19. Pipe culvert/out let drain -                      Location                      Type                      Measurement





Ayeyarwaddy Division  
Pathein-Thalat Khwar-Mawtinsoon Road

Annexe (B)



Ayeyarwaddy Division  
Pathein-Thalat Khwar-Mawtinsoon Road

Annexe (B)

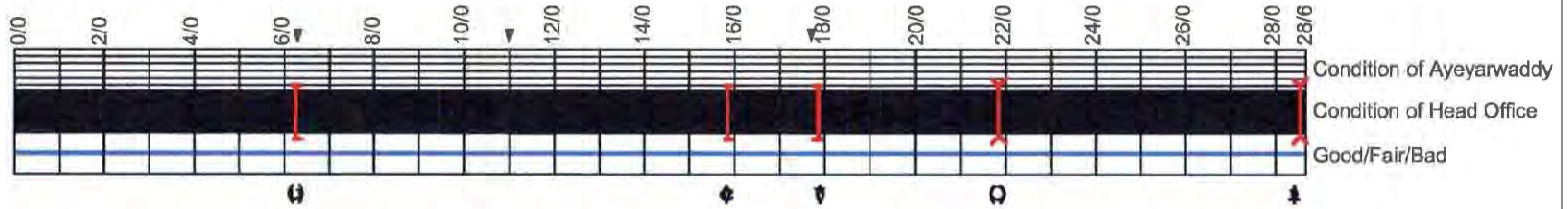




( 31 - 3 - 2012 ) Present Road Condition

Road Name : Pathein- Thalath Khwar-Maw Tin Soon Road  
Region : Ayeyarwaddy Region  
District : Pathein District

Road Length : 28 Miles 6 Furlongs  
Township : Pathein



- Paved Road
  - Macadam Road
  - Unpaved Road
  - Earth Road
  - Good
  - Fair
  - xx Bad
  - Paved Road
- (a) Yaethoegy Bridge (60')  
(b) Kine Chaung Bridge (60')  
(c) Talankuu Bridge (90')  
(d) Thabyu Chaung Bridge (120')  
(e) Kwin Chaung Bridge (120')

Sr	Type of Roads	Good	Fair	Bad	Total	Road Length
1	Paved Road	-	28 Miles,6 Furlongs	-	28 Miles,6 Furlongs	12'-0"= 28 Miles,6 Furlongs(0/0-28/6)
2	Macadam Road	-	-	-	-	-
3	Unpaved Road	-	-	-	-	-
4	Earth Road	-	-	-	-	-
	Tota	-	28 Miles,6 Furlongs	-	28 Miles,6 Furlongs	28 Miles,6 Furlongs

**Route No.9 “Road Data”**

1. Road name - Pathien - Thalat Khwar- Mawtin Son Road  
(Mile 0/0-96/0 = 96 miles 0 Furlong)
2. "Ka" list registered Road - This is "Ka" Listed Road.
3. Type of Road - No. 3, Longitudinal Highway Road.
4. History of the Road - Pathien-Thalat Khwar-Mawtin Soon road had constructed by contribution of Peoples living in the area and 0.5 Lakh budgeted from Ministry of Construction on 14.12.1989. Road was constructed shortest and best quality. Department of Timber Enterprise also gave assistance for construction of the road. The length of the road is 13/0 mile (Pathein-Shaw Pyar-Chaung Tha road), from JICA junction to Mawtinsun Pagoda 96/0 mile. The road is constructed in hilly area and nowadays, already upgraded to paved Road.

**Budget**

Sr.	Budget Year	Budget (Kyat Lakh)	Special Maintenance Fund	Normal Maintenance Fund	Total Fund	Remark
1.	1989-1990	5.00	-	-	5.00	
2.	1990-1991	30.00	-	-	30.00	
3.	1991-1992	15.00	-	-	15.00	
4.	1992-1993	40.00	-	-	100.00	
	(Addition)	60.00	-	-		
5.	1993-1994	50.00	-	-	50.00	
6.	1994-1995	30.00	-	-	30.00	
7.	1995-1996	20.00	-	-	78.00	
	1995-1996	58.00	-	-		
8.	1996-1997	20.00	-	-	70.00	
	(Addition)	50.00	-	-		
9.	1997-1998	60.00	8.00	-	118.00	
	(Addition)	50.00	-	-		
10.	1998-1999	100.00	-	-	100.00	
11.	1999-2000	30.00	-	-	30.00	



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- (9) Mile 15/7 - Sayae chaung
- (10) Mile 17/7 - Tatan Ku chaung
- (11) Mile 19/7 - Sayae chaung
- (12) Mile 20/0 - Kywe chaung
- (13) Mile 21/3 - Dar Thwe Kyauk chaung
- (14) Mile 21/6 - Tha Pyu chaung
- (15) Mile 26/0 - Kya Thaug
- (16) Mile 28/3 - Kwin chaung / Village
- (17) Mile 37/0 - Oak Shit Kwin Village junction
- (18) Mile 40/0 - Taw Gyi Village
- (19) Mile 54/3 - Ngauk Kaung south Village
- (20) Mile 60/5 - Narnat Gone Village
- (21) Mile 63/6 - Poelaung Village
- (22) Mile 71/2 - Phaung Doe Village (junction)
- (23) Mile 83/4 - Nga Pyay Ma Village
- (24) Mile 90/0 - Taung Kalay Village
- (25) Mile 90/6 - Kyauk Chaung Gyi Village
- (26) Mile 91/4 - Yae Nauk Aing Village

8. Borders
- Mile 0/0-28/3, Pathein Township, Pathein District, Ayarwaddy Region.
  - Mile 28/3-96/0, Ngapu Taw Township, Pathein District, Ayarwaddy Region.

9. Construction materials - stream gravel

Sr.	Mile	Location	Approximate Producibile qty	Far from Present road	Accessibility
1.	6/4	Yae Thoe Gyi	500suds	Near the Road	Dry season
2.	9/3	Mayan chaung	500suds	Near the Road	Dry season
3.	15/7	Kine chaung	500suds	Near the Road	Dry season
4.	17/7	TatanKu chaung	500suds	Near the Road	Dry season
5.	21/6	Tha Pyu chaung	1300 suds	Near the Road	Dry season
6.	28/3	Kwin chaung	2500 suds	Near the Road	Dry season
7.	48/5	Leik Kyee chaung	500 suds	Near the Road	Dry season
8.	53/6	MyitaYar chaung	200 suds	Near the Road	Dry season

The Project of Site Survey For Roads in Ayeyarwady Region  
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9.	54/4	Sat chaung	500 suds	Near the Road	Dry season
10.	56/7	Tin chaung	7000 suds	Near the Road	Dry season
11.	63/3	PoeLaung chaung	50000 suds	Near the Road	Dry season
12.	67/2	Khwenet chaung	1000 suds	Near the Road	Dry season
13.	84/7	Mayan chaung	500 suds	Near the Road	Dry season
14.	89/7	Ka Ngin chaung	500 suds	Near the Road	Dry season
15.	91/4	Yae Nauk Aing	500 suds	Near the Road	Dry season

Guiding Map attached

10. Mile post - Yes (Concrete)
11. Furlong post - Yes (Concrete)
12. Road Boundary Post - No.
13. Kind of Road - Paved /Macadam / Unpaved / Earth / Total  
 Length (Mile) 96 Miles / - / - / - / 96 Miles  
 0 Furlong 0 Furlong  
 Width 12' / - / - / - / -
14. Formation Width - 30' - 0" (Mile 0/0 - 96/0)
15. Embankment Height - Average 3' - 0"
16. Road Cross Section - Wearing Course Type Width Thickness  
 Mile 0/0 - 96/0 paved road 12Ft 3 Inch  
 Road Cross Section Drawing attached.
17. Road Shoulder - Type Width Thickness  
 Earth 3' - 0" 0' - 9"
18. Road Alignment Map - Attached
19. Pipe Culvert/Outlet drain - attached

**The Project of Site Survey For Roads in Ayeyarwady Region  
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- |     |                            |   |                                                    |
|-----|----------------------------|---|----------------------------------------------------|
| 20. | List of bridge on the Road | - | attached                                           |
| 21. | (Retaining Wall)           | - | No.                                                |
| 22. | Road side drain            | - | Left/ Right of Road/ Length/ Width/ Depth/ Type    |
| 23. | Geometric Design           | - | Mile (0/0 - 96/0) Left/ Right 50000'2' - 0"/ Earth |

**Supplement**

**20. List of Bridges on the Road**

Sr.	Name	No.	Length (Ft)	Width (Ft)	Type	Load limit (Ton)	Mile Post
1	YeThoGyi	1/7	60	24	RC Concrete	60	6/4-5
2	YeThoLay	1/8	30	24	RC Concrete	60	7/4-5
3	Mayan Stream	1/10	40	24	RC Concrete	60	9/1-2
4	Kanaso Stream	1/13	20	24	RC Concrete	60	12/7
5	KyaukSar Stream	1/14	20	24	Brick	60	13/7-14/0
6	Kaine Stream	1/16	60	24	Brick	60	15/6-7
7	Tatanku	1/18	90	24	RC Concrete	60	17/7
8	Ngarku Chaung Phyar	1/19	30	24	RC Concrete	60	18/0-1
9	RC Concrete	2/10	20	24	Brick	60	18/6-7
10	RC Concrete	3/19	10	24	Brick	60	18/7-19/0
11	Sayae Stream	1/20	40	24	RC Concrete	60	19/4-5
12	Kyawe Stream	1/21	20	24	RC Concrete	60	20/2-3
13	DarTweKyauk Stream	1/22	20	24	RC Concrete	60	21/2-3
14	RC Concrete	2/22	10	24	RC Concrete	60	21/4-5
15	Thapyu Stream	3/22	120	24	RC Concrete	60	21/6
16	RC Concrete	1/26	10	24	RC Concrete	60	25/1-2
17	KyaThaun Stream	1/27	30	24	Stone (Cobble)	60	26/3-4
18	RC Concrete	1/28	20	24	RC Concrete	60	27/5.6
19	Kwin Stream	1/29	120	24	Stone Masonry	60	28/5-6
20	RC Concrete	1/30	10	24	RC Concrete	60	29/4-5
21	RC Concrete	1/31	10	24	Stone Masonry	60	30/2
22	ThaPyaePin Stream	1/33	50	24	Stone Masonry	60	32/6-7
23	RC Concrete	1/35	15	24	RC Concrete	60	34/6-7

The Project of Site Survey For Roads in Ayeyarwady Region  
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Sr.	Name	No.	Length (Ft)	Width (Ft)	Type	Load limit (Ton)	Mile Post
24	RC Concrete	1/36	15	24	Stone Masonry	60	35/1
25	RC Concrete	2/36	15	24	Stone Masonry	60	35/1-2
26	Tasae Stream	1/39	30	24	Stone Masonry	60	38/5-6
27	SinLike Stream	1/40	20	24	Stone Masonry	60	40/0
28	RC Concrete	1/41	10	24	Stone Masonry	60	40/4-5
29	RC Concrete	1/42	20	24	Stone Masonry	60	43/7-44/0
30	RC Concrete	1/44	20	24	Stone Masonry	60	48/1-2
31	RC Concrete	1/49	20	24	Stone Masonry	60	48/1-2
32	Yaeshin	2/49	20	24	Stone Masonry	60	48/1-2
33	YoungYin Yaeshin	3/49	20	24	Stone Masonry	60	48/4-5
34	Leik Kyi	1/50	50	24	Stone Masonry	60	49/4-5
35	Sin SaKhan	1/51	20	24	RC Concrete	60	50/1-2
36	Htantapin	2/51	10	24	Stone Masonry	60	50/4-5
37	YaeShinTaung	3/51	20	24	RC Concrete	60	50/6-7
38	Kyan Stream(1)	4/51	30	24	RC Concrete	60	50/6-7
39	Kyan Stream (2)	1/52	30	24	RC Concrete	60	51/0-1
40	ThitPoke Stream	2/52	40	24	RC Concrete	60	51/3-4
41	Kyauk Yae San	3/52	20	24	RC Concrete	60	51/6-7
42	Yoe Stream	4/52	40	24	RC Concrete	60	51/7-52/0
43	DaNoe Stream	1/53	10	24	RC Concrete	60	52/1-2
44	Tal Stream	2/53	60	24	RC Concrete	60	52/3-4
45	Myittayar	1/54	100	24	RC Concrete	60	52/4-5
46	RC Concrete	2/54	10	24	RC Concrete	60	53/5-6
47	NagYokeKaung	3/54	100	24	RC Concrete	60	53/6-7
48	Sat Stream	1/55	60	24	RC Concrete	60	54/3-4
49	MiChaungKike	1/56	30	24	RC Concrete	60	55/4-5
50	MaGyeeKwin	1/57	30	24	RC Concrete	60	56/2-3
51	Tin Chaung	1/58	150	24	RC Concrete	60	57/0-1



The Project of Site Survey For Roads in Ayeyarwady Region  
Ayeyarwady Division, Union of Myanmar

Sr.	Name	No.	Length (Ft)	Width (Ft)	Type	Load limit (Ton)	Mile Post
52	PyauungPyanStream(1)	1/59	30	24	RC Concrete	60	58/2
53	KyaeTae Stream	2/59	60	24	RC Concrete	60	58/3-4
54	RC Concrete	1/60	20	24	RC Concrete	60	59/0-1
55	PyauungPyan Stream(2)	2/60	30	24	RC Concrete	60	59/3-4
56	Ywar Thit Stream	1/61	30	24	RC Concrete	60	60/0-1
57	Kukko Stream(1)	2/61	50	24	RC Concrete	60	60/5-6
58	Narnat Gone	3/61	60	24	RC Concrete	60	60/7
59	RC Concrete	1/62	10	24	RC Concrete	60	61/1-2
60	Kukko Stream(2)	2/62	60	24	RC Concrete	60	61/3
61	RC Concrete	3/62	20	24	RC Concrete	60	61/4-5
62	PoeLaung Stream	1/64	240	24	RC Concrete	60	63/4
63	MalThiLa San (1)	1/65	10	24	RC Concrete	60	64/4
64	MalThiLa San (2)	1/66	10	24	RC Concrete	60	65/3
65	MalThiLa San (3)	1/67	20	24	RC Concrete	60	66/1
66	TaungPaw Stream	2/67	15	24	RC Concrete	60	66/6-7
67	Khwe Net Stream	3/67	40	24	RC Concrete	60	66/7-67-0
68	Payar Stream	1/68	30	24	RC Concrete	60	67/6-7

The Project of Site Survey For Roads in Ayeyarwady Region  
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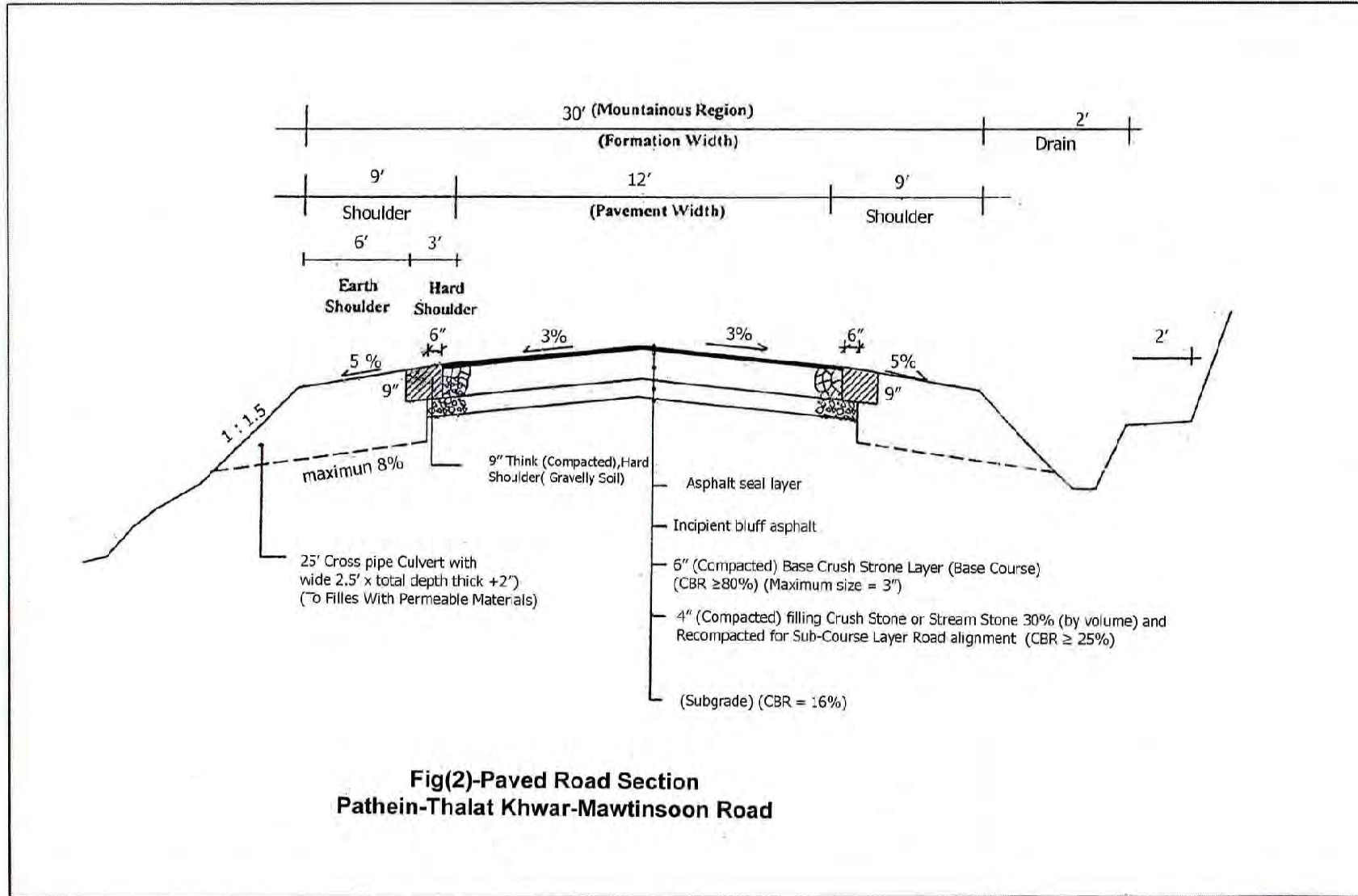
Sr.	Location	Type	Measurement	Remark
1.	Mile 0/0	Box Culvert	22'	
2.	Mile 39/5-6	Box Culvert	5' x 5' - 22'	
3.	Mile 39/7 - 40/0	Box Culvert	5' x 5' - 22'	
4.	Mile 41/1 - 2	Box Culvert	5' x 5' - 22'	
5.	Mile 42/2 - 3	Box Culvert	5' x 5' - 22'	
6.	Mile 41/4 - 5	Box Culvert	5' x 5' - 22'	
7.	Mile 41/5-6	Box Culvert	5' x 5' - 22'	
8.	Mile 41/6 - 7	Box Culvert	5' x 5' - 22'	
9.	Mile 41/7 - 42/0	Box Culvert	5' x 5' - 22'	
10.	Mile 41/7 - 42/0	Box Culvert	5' x 5' - 22'	
11.	Mile 42/0 - 1	Box Culvert	5' x 5' - 22'	
12.	Mile 42/1 - 2	Box Culvert	5' x 5' - 22'	
13.	Mile 42/2 - 3	Box Culvert	5' x 5' - 22'	
14.	Mile 42/3 - 4	Box Culvert	5' x 5' - 22'	
15.	Mile 42/4 - 5	Box Culvert	5' x 5' - 22'	
16.	Mile 42/6 - 7	Box Culvert	5' x 5' - 22'	
17.	Mile 42/7 - 43/0	Box Culvert	5' x 5' - 22'	
18.	Mile 43/1 - 2	Box Culvert	5' x 5' - 22'	
19.	Mile 43/4 - 5	Box Culvert	5' x 5' - 22'	
20.	Mile 44/0 - 1	Box Culvert	5' x 5' - 22'	
21.	Mile 44/2 - 3	Box Culvert	5' x 5' - 22'	
22.	Mile 45/4 - 5	Box Culvert	5' x 5' - 22'	
23.	Mile 46/1 - 2	Box Culvert	5' x 5' - 22'	
24.	Mile 47/1 - 2	Box Culvert	5' x 5' - 22'	
25.	Mile 47/4 - 5	Box Culvert	5' x 5' - 22'	
26.	Mile 47/5 - 6	Box Culvert	5' x 5' - 22'	
27.	Mile 48/1 - 1	Box Culvert	5' x 5' - 22'	
28.	Mile 48/2 - 3	Box Culvert	5' x 5' - 22'	
29.	Mile 48/6 - 7	Box Culvert	5' x 5' - 22'	
30.	Mile 48/7 - 49/0	Box Culvert	5' x 5' - 22'	
31.	Mile 49/3 - 4	Box Culvert	5' x 5' - 22'	

The Project of Site Survey For Roads in Ayeyarwady Region  
Ayeyarwady Division, Union of Myanmar

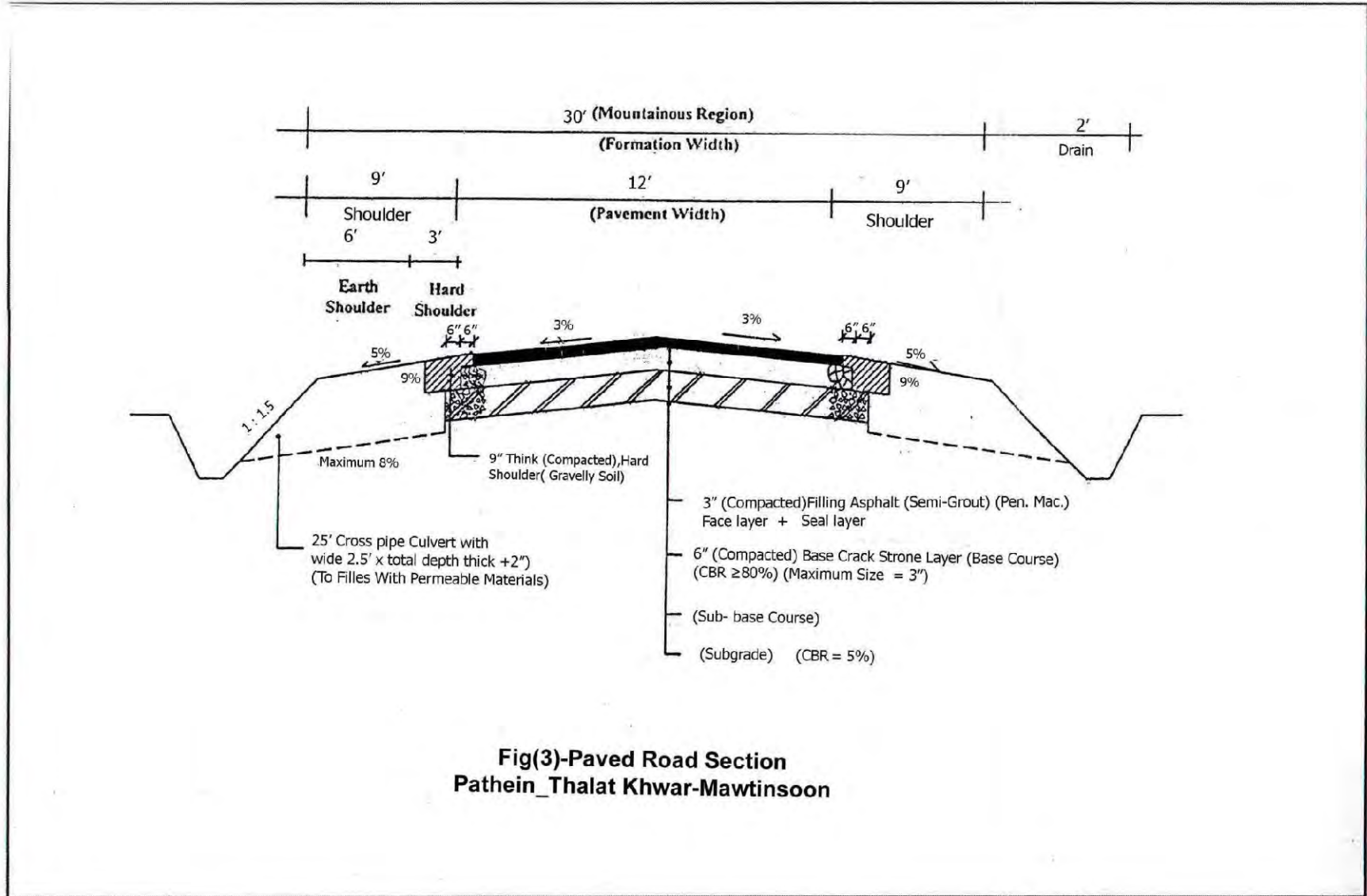
Sr.	Location	Type	Measurement	Remark
32.	Mile 49/5 - 6	Box Culvert	5' x 5' - 22'	
33.	Mile 49/6 - 7	Box Culvert	5' x 5' - 22'	
34.	Mile 49/6 - 7	Box Culvert	5' x 5' - 22'	
35.	Mile 49/7 - 50/0	Box Culvert	5' x 5' - 22'	
36.	Mile 49/7 - 50/0	Box Culvert	5' x 5' - 22'	
37.	Mile 50/1 - 2	Box Culvert	5' x 5' - 22'	
38.	Mile 50/1 - 2	Box Culvert	5' x 5' - 22'	
39.	Mile 50/2 - 3	Box Culvert	5' x 5' - 22'	
40.	Mile 50/2 - 3	Box Culvert	5' x 5' - 22'	
41.	Mile 50/4	Box Culvert	5' x 5' - 22'	
42.	Mile 50/6	Box Culvert	5' x 5' - 22'	
43.	Mile 51/7	Box Culvert	5' x 5' - 22'	
44.	Mile 51/0	Box Culvert	5' x 5' - 22'	
45.	Mile 51/3 - 4	Box Culvert	5' x 5' - 22'	
46.	Mile 51/4 - 5	Box Culvert	5' x 5' - 22'	
47.	Mile 51/5-6	Box Culvert	5' x 5' - 22'	
48.	Mile 52/0 - 1	Box Culvert	5' x 5' - 22'	
49.	Mile 52/1 - 2	Box Culvert	5' x 5' - 22'	
50.	Mile 52/2 - 3	Box Culvert	5' x 5' - 22'	
51.	Mile 52/3 - 4	Box Culvert	5' x 5' - 22'	
52.	Mile 52/4	Box Culvert	5' x 5' - 22'	
53.	Mile 52/5 - 6	Box Culvert	5' x 5' - 22'	
54.	Mile 52/5 - 6	Box Culvert	5' x 5' - 22'	
55.	Mile 52/6 - 7	Box Culvert	5' x 5' - 22'	
56.	Mile 52/6 - 7	Box Culvert	5' x 5' - 22'	
57.	Mile 58/0 – 1	Box Culvert	3-ft – 22-ft	
58.	Mile 58/0 – 1	Box Culvert	3-ft – 22-ft	
59.	Mile 58/1 – 2	Box Culvert	3-ft – 22-ft	
60.	Mile 59/4 – 5	Box Culvert	3-ft – 22-ft	
61.	Mile 59/6 – 7	Box Culvert	3-ft – 22-ft	
62.	Mile 60/1 – 2	Box Culvert	3-ft – 22-ft	

The Project of Site Survey For Roads in Ayeyarwady Region  
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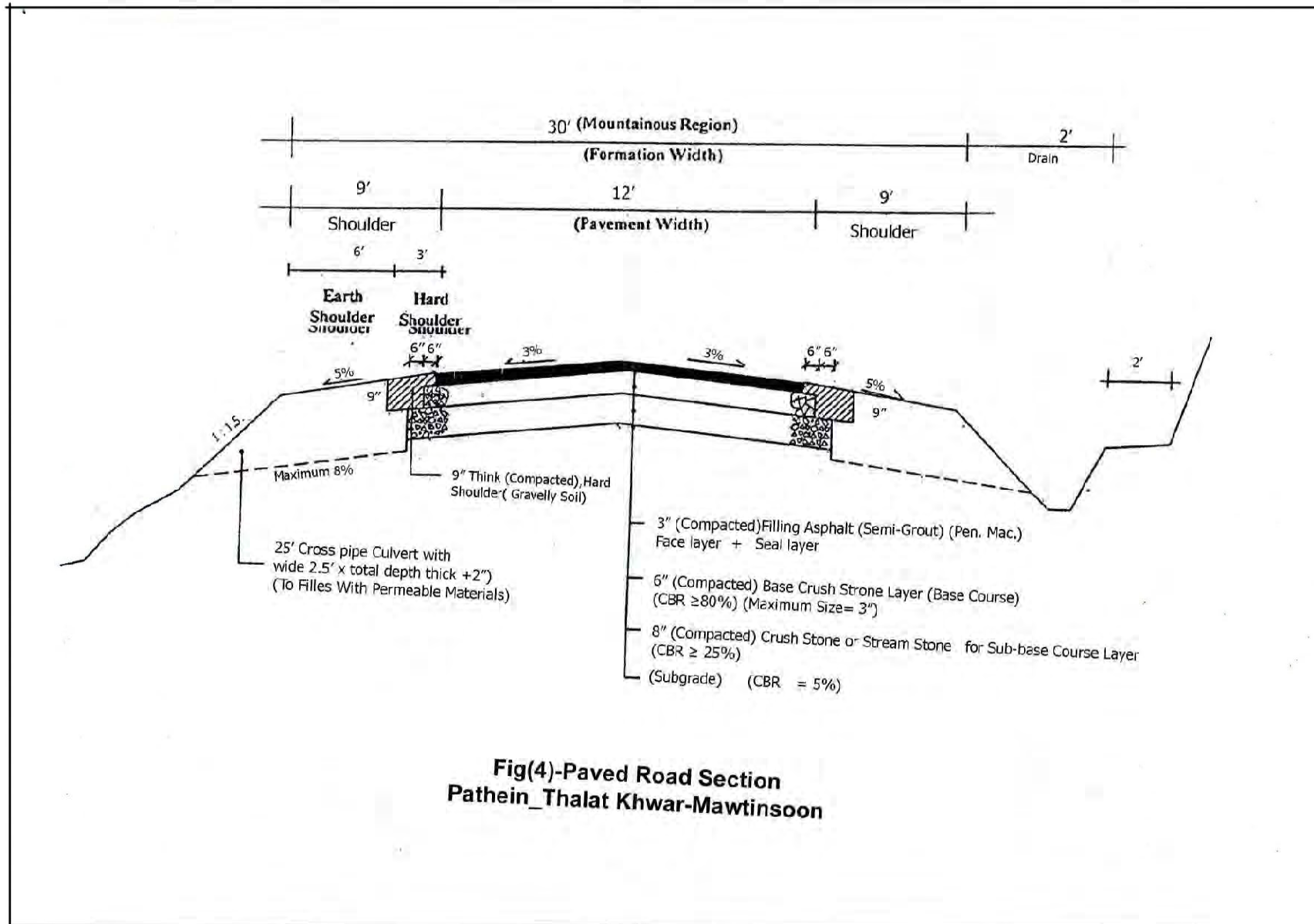
<b>Sr.</b>	<b>Location</b>	<b>Type</b>	<b>Measurement</b>	<b>Remark</b>
63	Mile 60/2 – 3	Box Culvert	3-ft – 22-ft	
64	Mile 61/0 – 1	Box Culvert	5-ftx5-ftx22-ft	
65	Mile 61/1 – 2	Box Culvert	3-ft – 22-ft	
66	Mile 61/6 – 7	Box Culvert	3-ft – 22-ft	
67	Mile 62/1 – 2	Box Culvert	3-ft – 22-ft	
68	Mile 62/2 – 3	Box Culvert	3-ft – 22-ft	
69	Mile 62/4 – 5	Box Culvert	3-ft – 22-ft	
70	Mile 62/5 – 6	Box Culvert	3-ft – 22-ft	
71	Mile 63/1 – 2	Box Culvert	3-ft – 22-ft	
72	Mile 63/3	Box Culvert	3-ft – 22-ft	
73	Mile 63/3 – 4	Box Culvert	3-ft – 22-ft	
74	Mile 63/4	Box Culvert	3-ft – 22-ft	



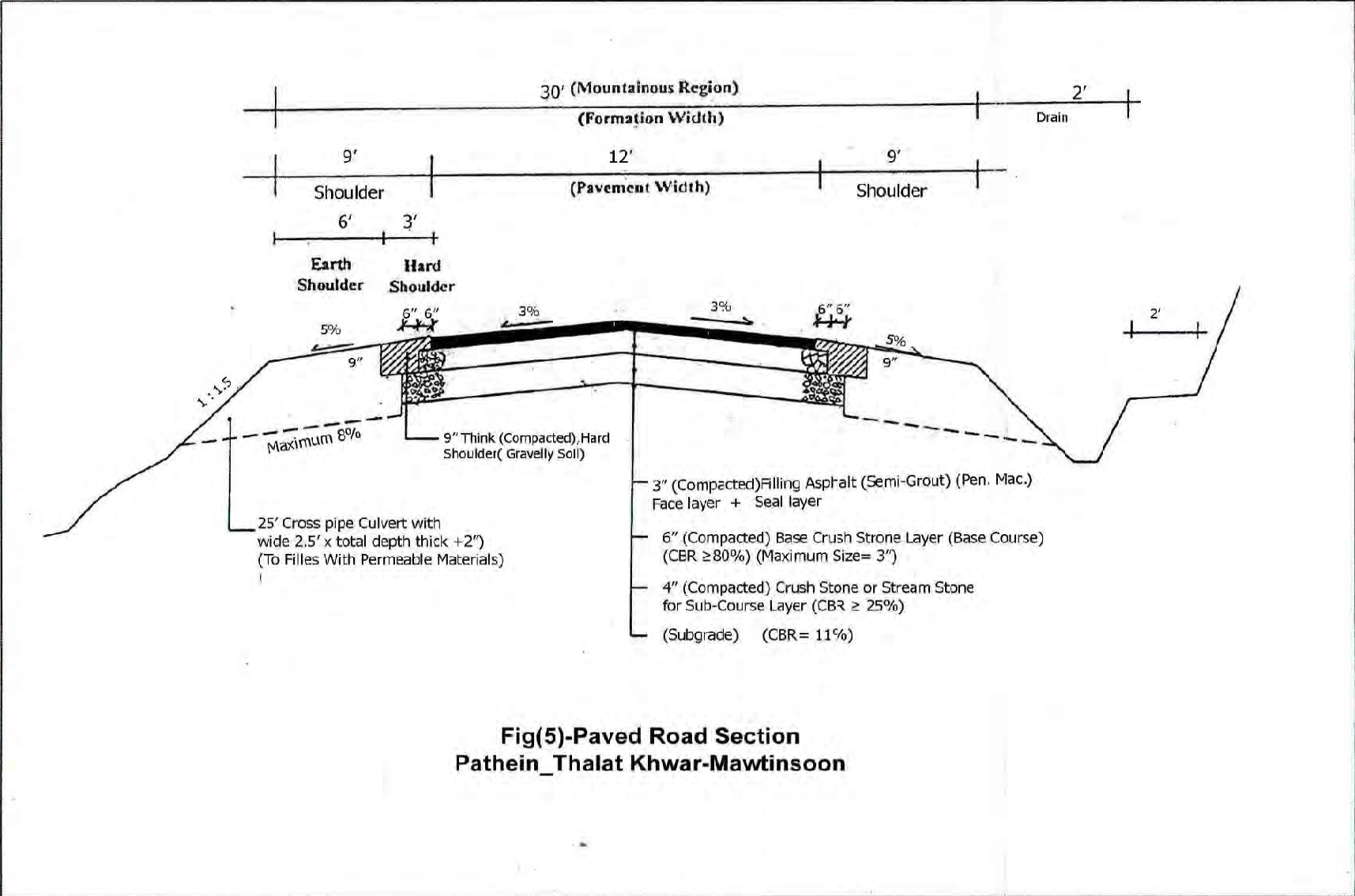
**Fig(2)-Paved Road Section  
Pathein-Thalat Khwar-Mawtinsoon Road**



**Fig(3)-Paved Road Section  
Pathein\_Thalat Khwar-Mawtinsoon**

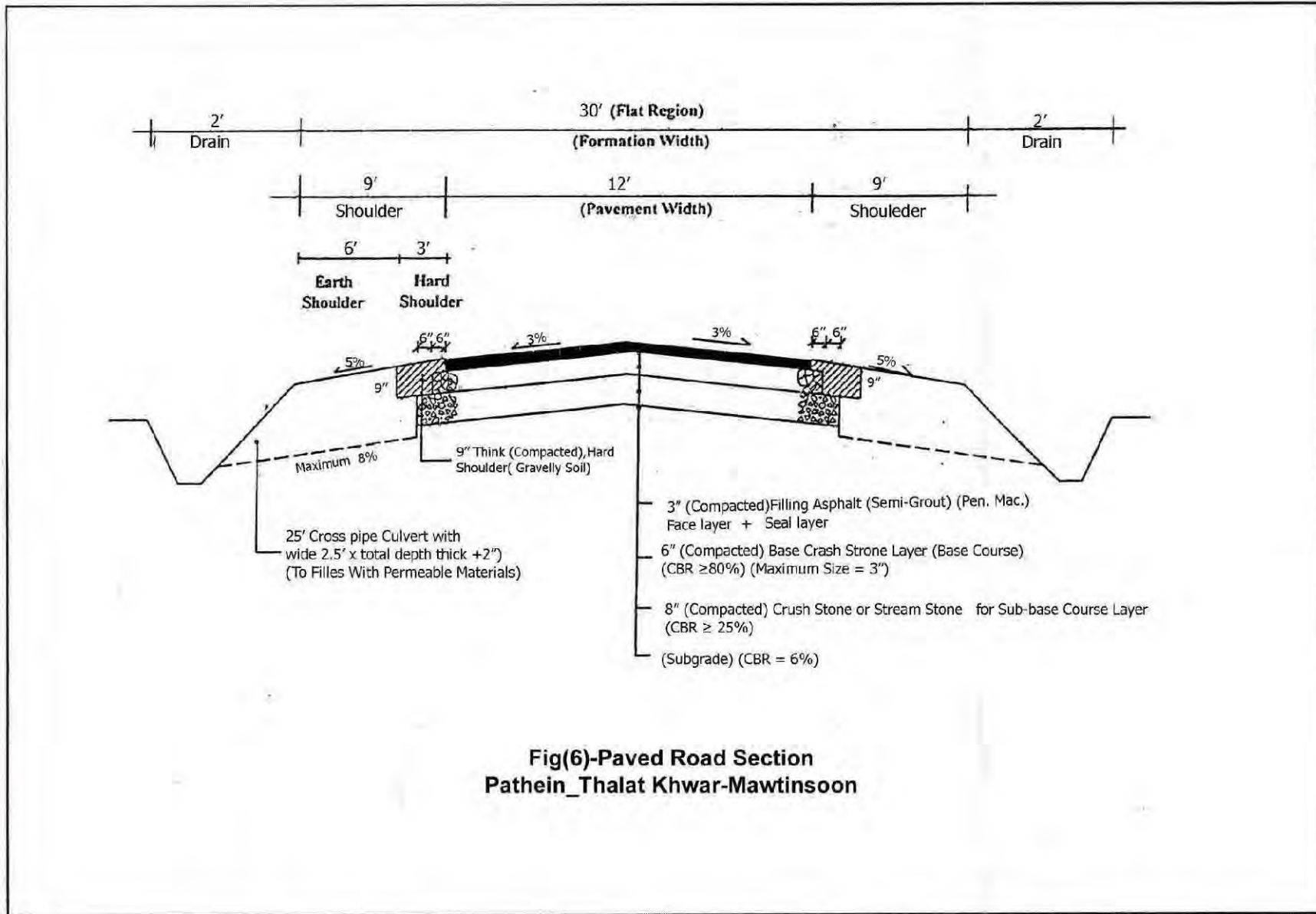


**Fig(4)-Paved Road Section  
Pathein\_Thalat Khwar-Mawtinsoon**

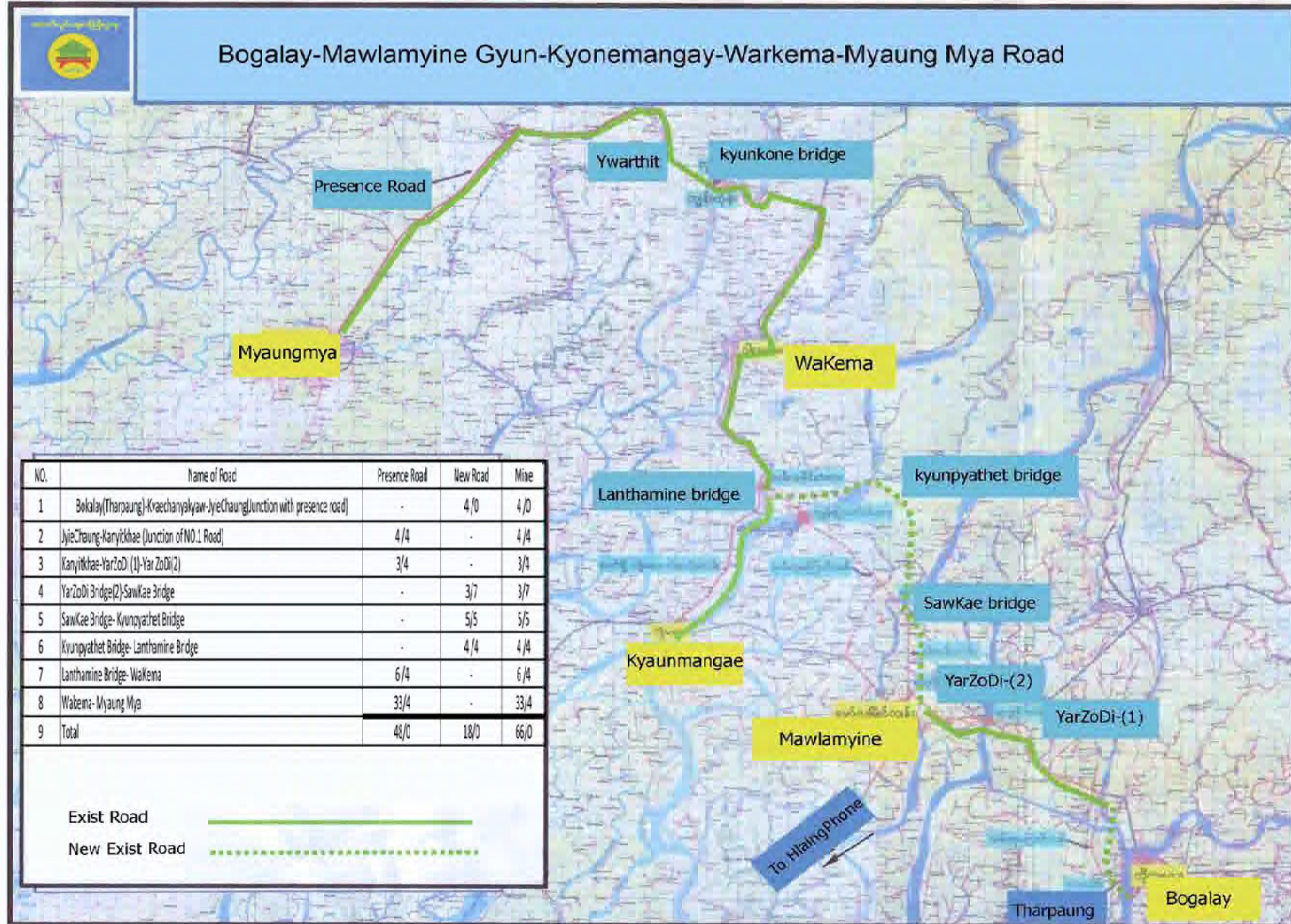


Fig(5)-Paved Road Section  
Pathein\_Thalat Khwar-Mawtinsoon





**Fig(6)-Paved Road Section  
Pathein\_Thalat Khwar-Mawtinsoon**



**Myaung Mya District**

**Route No. (10)**

**Bogalay-Mawlamying Gyun-Kyunmangae-Wakema- Myaung Mya Road**

**Road Data**

1. Road name - Bogalay- Malamyang Kyun-Kyunmangae-Wakema-Myaung Mya
2. Length of Road (Mile) - Mile 13/1 to 66/0 (52 miles 7 Furlong)
3. History of the Road - Attached herewith
4. Mile post starting - Yazu Dine bridge (13/1) mile  
Town/ Village
5. Mile post ending - Myaung Mya Township/ Kwe Lwe Village (66/0)  
Town/ Village
6. Road crossing at Town - Mile 13/1 Yazu Dine bridge  
village, stream, river - Mile 27/5- Boe Bae Village  
- Mile 31/0- Lan Thamine Ywa Lay Village  
- Mile 33/0-Kyon Sein Village  
- Mile 33/3- Kyon Pauk Village  
- Mile 33/5- Wakema bridge  
- Mile 34/2- Tayoketan Village  
- Mile 34/3- Htaw Kanwat Village  
- Mile 35/2- U Gyi Taw Village  
- Mile 35/7- Taung Ahu Thapyu Village  
- Mile 36/7- Taungoo Chaung Phyar Village  
- Mile 38/0- Ngapyaw Su Village  
- Mile 38/3- Thae Gone Village  
- Mile 39/2- Kyon Thon Village  
-Mile 39/5-Kyar Khat Gone Village  
- Mile 44/0- Ahu Kyun Village  
- Mile 45/0- Yae Lein Village  
- Mile 45/1-Kyun Gone Village  
- Mile 45/2-Kwin Pauk Village  
- Mile 47/3-Kanyin Kwin Village  
- Mile 49/5-Wae Gyiwe Village  
- Mile 49/7-Einme stream  
-Mile 50/3-Ywar Thit Village  
- Mile 51/1- Thar Kwin stream

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- Mile 51/3-Thar Kwin Village
- Mile 52/1- Kyar Naphu stream
- Mile 53/4-Kyon Tone stream
- Mile 54/1-Maezali Sarphusu Village
- Mile 55/6-Pwesar Gon Nyintan Village
- Mile 57/7- Kan Gyi Village
- Mile 58/8-Thapyae chaung Village
- Mile 59/2-Thamin Chan Village
- Mile 60/3-Madawt Pin Village
- Mile 61/2-Kan Chaung Village
- Mile 62/2-Kyonwar Village/ Chaung Phyar Village
- Mile 62/7-Danone Chaung Village
- Mile 63/4-Sitapin Village
- Mile 64/6-Kyar Phu Ngone Latpan Village
- Mile 66/0-kwe Lwe Village

7.	Type of Road	-Paved Road	9 mile 5.5 Furlong
		Macadam road	18 mile 6.5 Furlong
		Unpaved road	10 miles 3 Furlong
		Earth road	14 miles 0 Furlong
8.	Width of Road	18' wide - 7 miles 2 Furlong	
		14' wide - 1 miles 4 Furlong	
		12' wide - 44 miles 1 Furlong	
9.	Road section Map	- Attached herewith	
10.	Road Alignment Map	-Attached herewith	
11.	Bridge and list of pipe culvert	- The list attached herewith	
12.	Road side drain	-	
13.	Constructed year	- 1999	
14.	Ownership	- Public Works	

**Myaung Mya District**

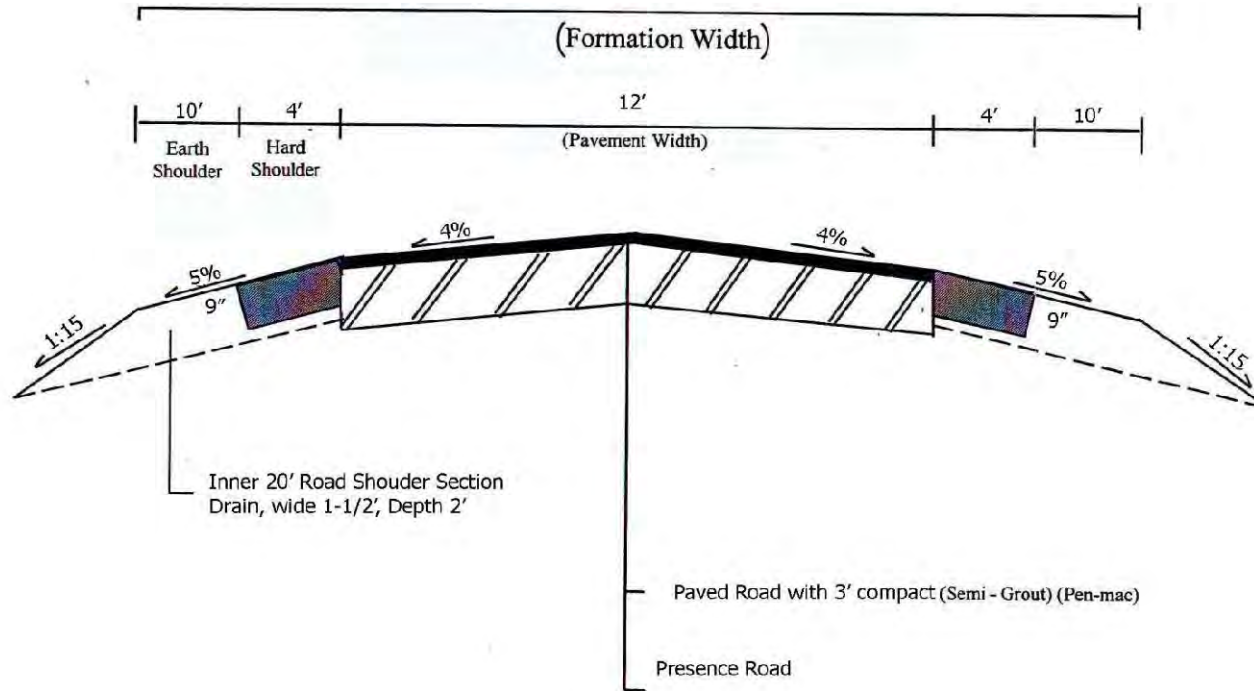
**Route No.(10)**

**Background History of Bogalay-Mawlaying Gyun-Kyunmangae-Wakema- Myaung Mya Road**

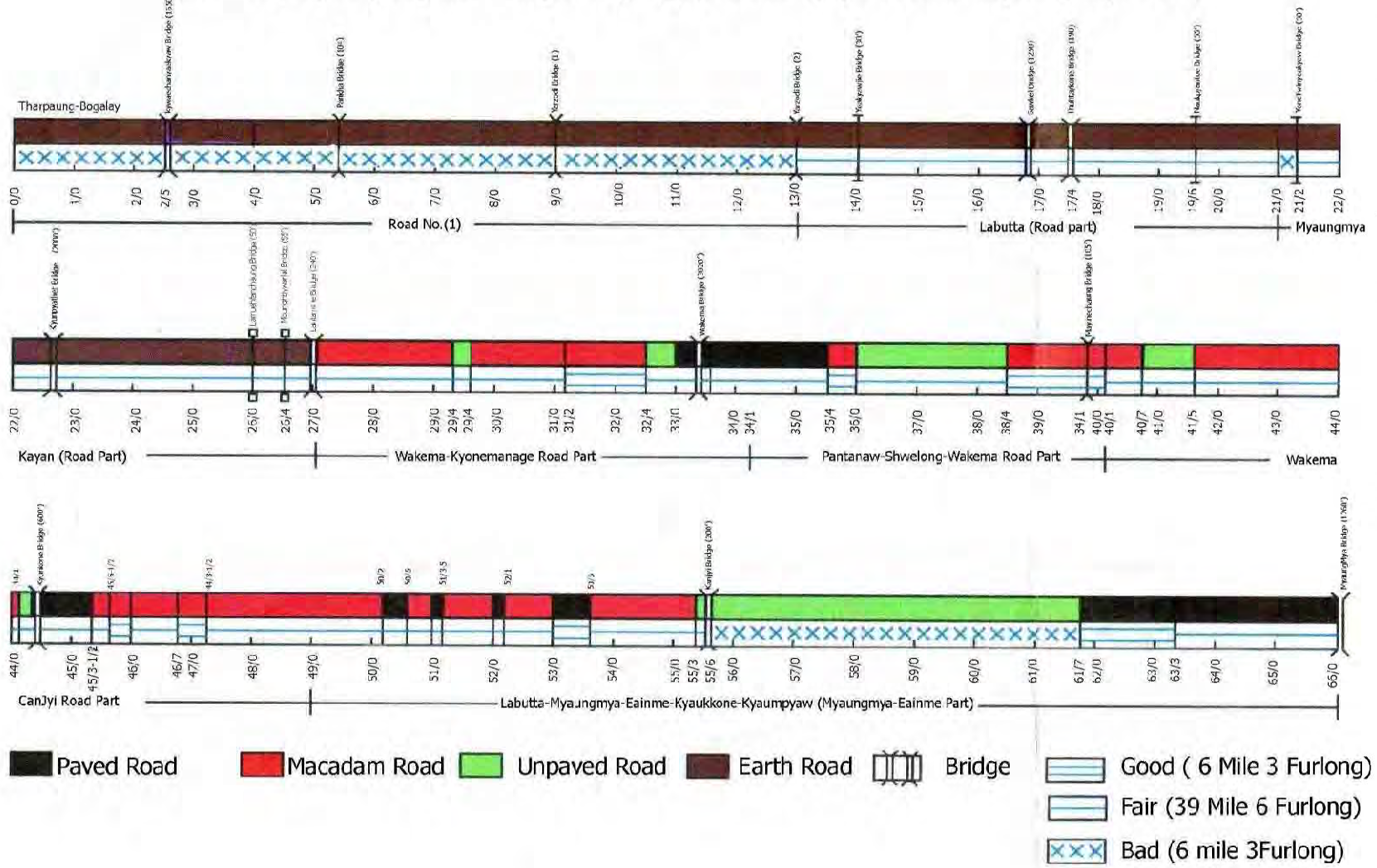
Route No. 10, Bokalay - Mawlamying Kyun- Kyunmangae- Wakema- Myaung Mya is main crossing Road of Union Highway, from 22/4 to 66/0 mile (43 miles and 4 Furlong). Length from 22/4 to 45/2mile, (22 mile and 6 Furlong), is part of Wakema Township. Road embankment was finished by the leading of Township Law and Order Restoration Council along with the contribution of community on April to July 1991. Pavement of stone was finished from 1991-1992 to 2001-2002 with the yearly budgets. From 45/2 to 55/6miles (10 miles 4 Furlong) is the part of Einme Township. Construction of earthwork embankment was completed on 30.4.1992. 1st layer of Sub-base course was started on 1991-1992 budget year and completed on 1995-1996 budget year. From 1991-1992 budget year, 2<sup>nd</sup> layer of Sub-base course was started and completed on 2013-2014 budget year. 1st and 2nd layer of Base course and bituminous surfacing were started on 1998-1999 and stone surfacing for 2<sup>nd</sup> layer of Base Course (7 Furlong) and Paved Road (3 miles 1.5 Furlong ) were completed on 2011-2012.

From 55/6 to 66/0 mile (10 miles 2 Furlong), is the part of Myaung Mya Township Region and the roads were constructed from 1989-1990 budget year with the contribution of community. Construction of earthwork embankment was started on 2001-2002 budget year and completed 1st layer of Base course (5 miles and 7.5 Furlong) on 2005-2006 budget year, Paved Road (3 Miles and 1 Furlong) was completed on 2005-2006 to 2012-2013 budget year.

### Bolay-Mawlamyein Gyun-Kyonemangay-Myaung Mya Road (Mile from 0/0 upto 66/0 = 66Miles 0 Furlong)



Road No(10) Bogalay-Mawlamyine Gyun\_Kyonemangay-Wakema-Myaung Mya Road



**Myaung Mya District**

**Wakema Township**

**Road Data**

- |    |                     |   |                                                                                                                                                                                                                                                                                                                                                          |
|----|---------------------|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. | Road name           | - | Bogalay-Mawlamying-Gyun-Kyunmangae-Wakema-Myaung Mya (Wakema-Kyunmangae Road Section)                                                                                                                                                                                                                                                                    |
|    | Length of Road      | - | Mile 27/1 to 33/5 (6 miles and 4 Furlong)                                                                                                                                                                                                                                                                                                                |
| 2. | "Ka" Listed Road    | - | Yes "Ka" Listed Road                                                                                                                                                                                                                                                                                                                                     |
| 3. | Union Gov-Road      | - | Cross Road of Highway Road.<br>Serial No.14                                                                                                                                                                                                                                                                                                              |
| 4. | History of the Road | - | Wakema Township (Wakema- Kyunmangae Road Section)<br>Construction of earthwork embankment was done by the leading of Township Law & Order Restoration Council along with the contribution of community and completed within (three) months from April to July' 1991. Two layer of stone surfacing was done from Mile (0/0-13/5) with the yearly budgets. |

Yearly Budget Allotment

**Budget yearKyat- Million**

1991-1992	5.00
1992-1993	4.00
1993-1994	4.00
1994-1995	3.65
1995-1996	5.00
1996-1997	1.00
1997-1998	1.00
1998-1999	
1999-2000	2.500
2000-2001	4.34
2001-2002	15.00
2002-2003	20.00
2003-2004	15.00
2004-2005	64.00
2005-2006	85.00



**Budget year Kyat- Million**

2006-2007	17.800
2007-2008	47.300
2008-2009	30.00
2009-2010	34.00
2010-2011	34.00
2011-2012	14.00
2012-2013	110.75

The Road of Wakema-Kyunmangae is situated at flat land area of delta region.

- |     |                                                     |   |                                                                                                                                                                       |
|-----|-----------------------------------------------------|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 5.  | Mile post starting<br>Town/Village                  | - | Wakema Town (Road of Wakema-Kyunmangae)                                                                                                                               |
| 6.  | Mile post ending<br>Town/ Village                   | - | Kyunmangae Town (Road of Wakema-<br>Kyunmangae)                                                                                                                       |
| 7.  | Road crossing at Town,-<br>Village, rivers, streams | - | Wakema (Mile 33/5)<br>- Kyon Sein Village (Mile 33/1)<br>- Kyon Pauk Village (Mile 33/3)<br>- Lan Thamine Ywar Lay Village (Mile 31/0)<br>- Bobay Village (Mile 27/5) |
| 8.  | Borders                                             | - | The Road link with Wakema at the East, West and<br>North and Kyunmangae at the South.                                                                                 |
| 9.  | Road Construction materials                         | - | No                                                                                                                                                                    |
| 10. | Mile post                                           | - | Yes (concrete post)                                                                                                                                                   |
| 11. | Furlong post                                        | - | Yes (wooden post)                                                                                                                                                     |
| 12. | Road boundary post                                  | - | Yes (wooden post)                                                                                                                                                     |
| 13. | Type of Road                                        | - | Attached herewith                                                                                                                                                     |

**The Project of Site Survey For Roads in Ayeyarwady Region  
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	Length (Mile)			
	Width			
14.	Formation Width	-	30ft	
15.	Embankment Height	-	8ft (Average)	
16.	Map of Road section	-	Attached herewith	
17.	Road shoulder			
	Type		Width	Thickness
	(Earth Road)		3ft each side	6 inches
18.	Map of Road Alignment	-	Attached herewith	
19.	Culvert/ Out let drain	-	No	
20.	List of bridge along the Road	-	Attached herewith	
21.	Retaining Wall	-	No	
22.	Road side drain	-		
	<u>Left/ right of Road</u>		<u>Length</u>	<u>Width depth</u>
	Type			
23.	Geometric Design	-		

**Wakema-Kyonemangay Road(Union Road)**

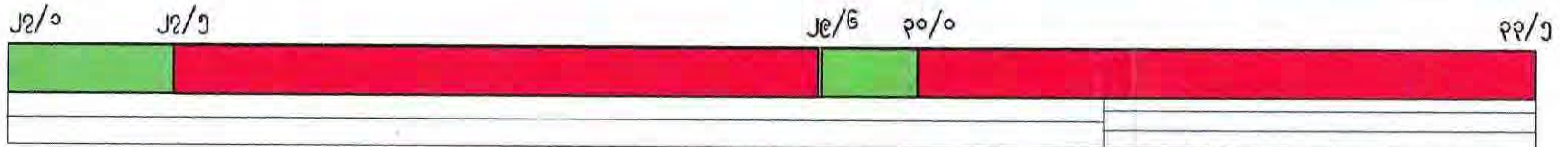
ROAD NAME - Road no.(10) Bogalay - Mawlamyine Kyun - Kyaunmangae - Wakema - Myaung Mya (Wakema - Kyaunmangae Road piece)

Division/ State - Ayeyarwady Division

Length of Road - Mile 27/1 - 33/5 (6 Mile 4 funlong)

District - Myaung Mya

Township - Wakema



Head Office Legend

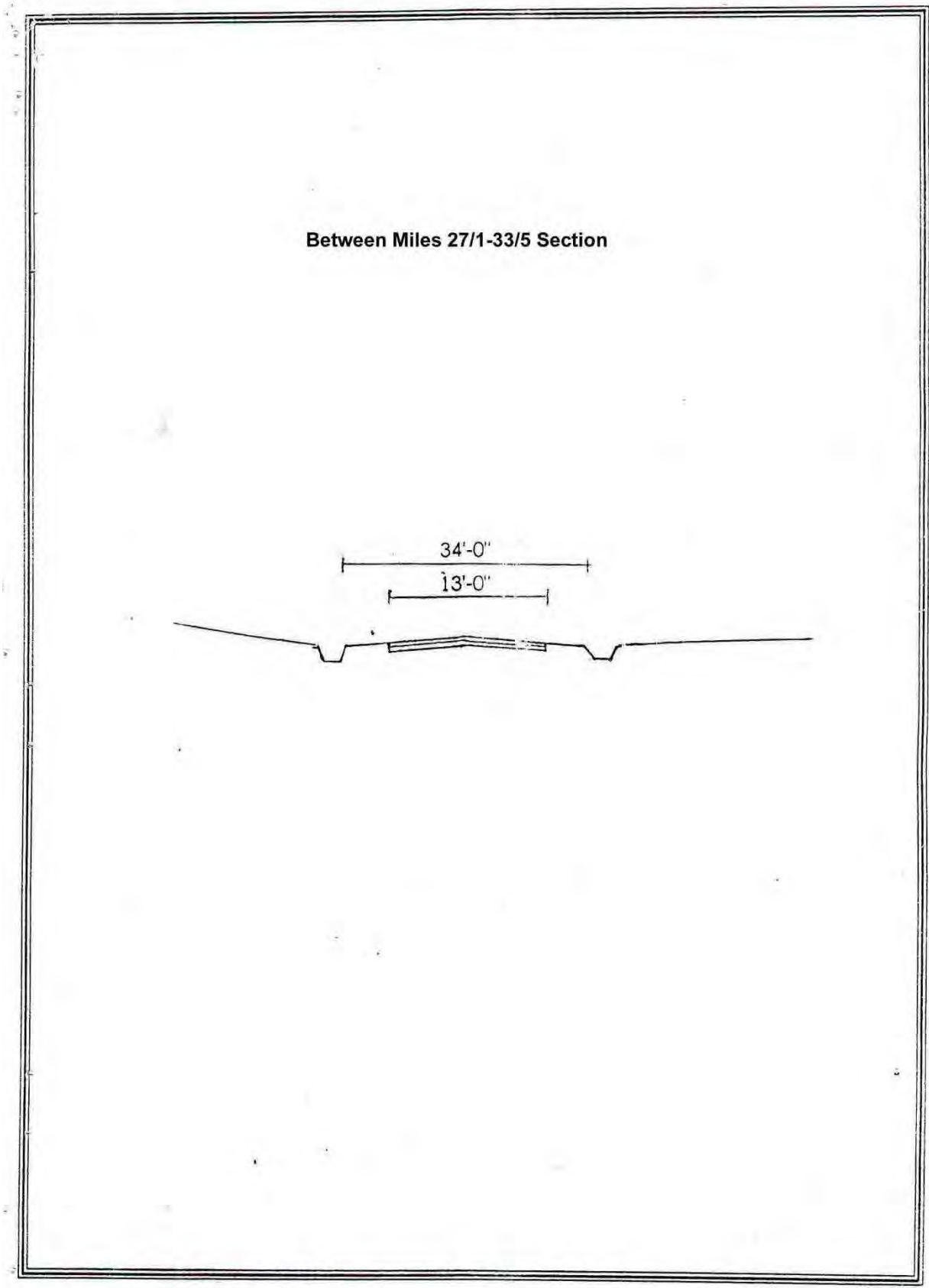
- Paved Road
- Macadam Road
- Unpaved Road
- Earth Road
- Good
- Fair 1
- Bad

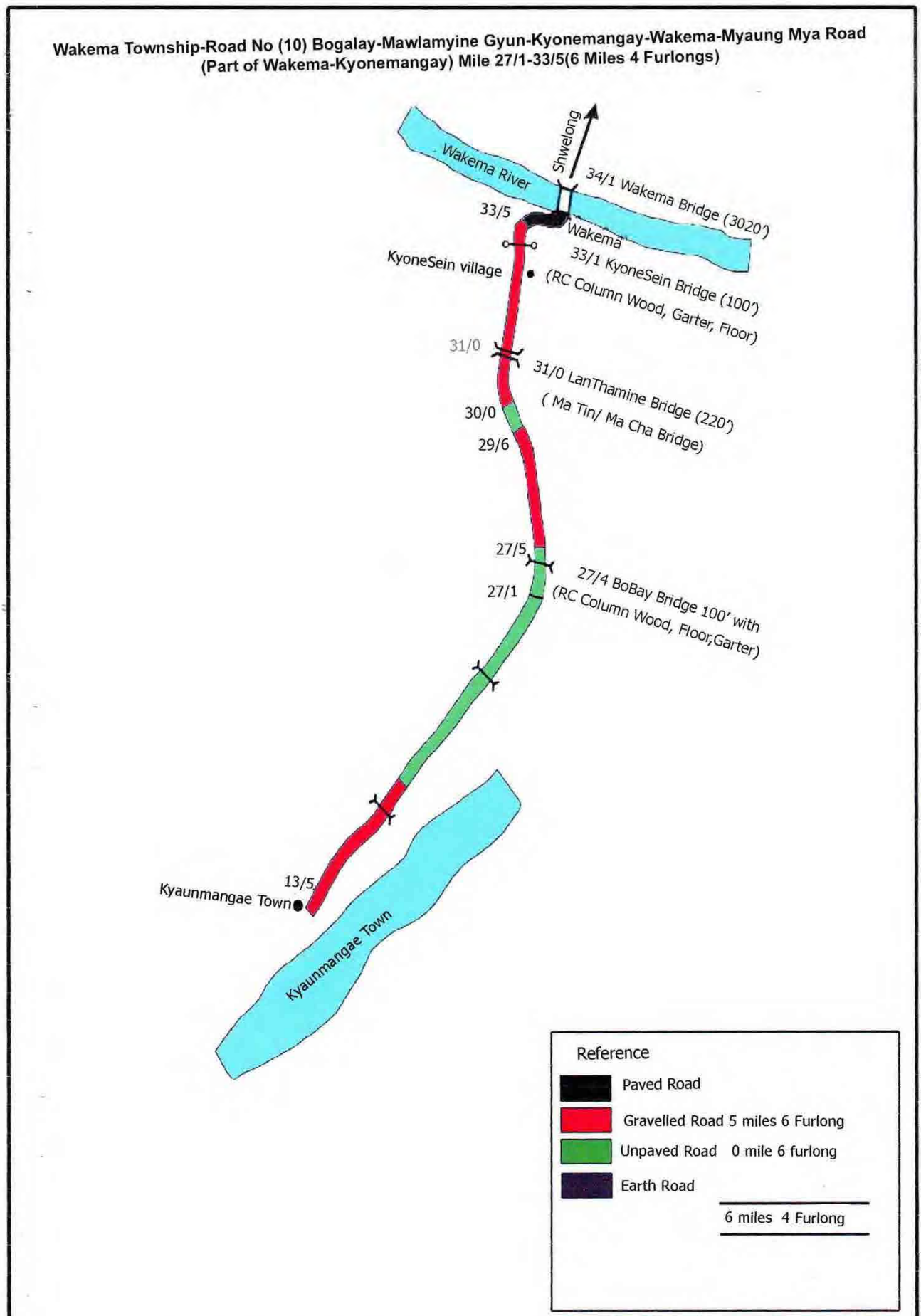
Ayeyarwady Legend

- Paved Road
  - Sub-Base Second Layer
  - Sub-Base First Layer
  - 2nd Sub-Base Second Layer
  - 2nd Sub-Base First Layer
  - Chaun Macadam Road
  - MIX Road
  - Earth Road
- Macadam Road (includes Sub-Base Second Layer and Sub-Base First Layer)
- Unpaved Road (includes 2nd Sub-Base Second Layer, 2nd Sub-Base First Layer, Chaun Macadam Road, MIX Road, and Earth Road)

NO.	Type of Roads	Good	Fair	Bad	Total	wide of Road	Remark
1	Paved Road	-	-	-			
2	Macadam Road	1 - 6	4 - 0		5 - 6		
3	Unpaved Road		0 - 6		0 - 6		
4	Earth Road						
	Total	1 - 6	4 - 6		6 - 4		

( သန့်စင် )  
 လက်ထောက်အင်ဂျင်နီယာ ( ဗြိတိ )  
 ဖြည့်သူ့အောက်လုပ်ရေးလုပ်ငန်း  
 ဝါးခယ်မမြို့





The Project of Site Survey For Roads in Ayeyarwady Region  
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20, List of bridge along the Road

Sr	Bridge Name	Bridge No.	Length	Width	Type	Year of Completion	Capacity
1.	Kyon Sein bridge	1/34	146'-0"	14'-0	R.C Concrete pier Timber decking	1993	5
2.	Lan Thamine	1/32	220'-0	18'-0	(A) Super structure, mid span, RSJ frame, and decking was uplifted to increase the decking height to get more room height for water transport, can make 24' freeboard system.  (B) Substructure is RC concrete post  (C) Foundation with RC concrete bore pile.	2002	20
3.	Boebay Bridge	1/28	200'-0"	14'-0"	RC concrete post Timber decking	1993	5

**Myaung Mya District**  
**Wakema Township**  
**The Particulars of Related Road**

1. Road name - Bogalay- Mawlamying Gyun, Kyunmangae- Wakema- Myaung Mya  
(Pantanaw - Shwe Laung- Wakema Road Section)  
Length of Road - Mile 33/5 40/1 (6 miles and 4 Furlong)
2. "Ka" Listed Road - This is "Ka" Listed Road.
3. Type of Road (Union Highway Road) - Crossing Highway Road  
Serial No.15 (Pantanaw- Shwe Laung- Wakema Road Section)
4. History of the Road - Wakema Township (Pantanaw- Shwe Laung- Wakema Road Section)  
Construction of earthwork embankment was done by the leading of  
Township Law & Order Restoration Council along with the  
contribution of community on April to July' 1991.

Yearly Budget Allotment

<u>Budget Year</u>	<u>Kyat- Million</u>
1992-1993	2.018
1993-1994	5.0
1994-1995	3.0
1995-1996	2.0
1996-1997	1.0
1997-1998	2.0
1998-1999	5.0
1999-2000	5.0
2000-2001	10.0
2001-2002	37.745
2002-2003	42.5
2003-2004	53.84
2004-2005	75.0
2005-2006	90.0
2006-2007	39.68
2007-2008	37.10
2008 - 2009	50.00
2009 - 2010	121.00
2010 - 2011	185.00
2011 - 2012	15.00

**The Project of Site Survey For Roads in Ayeyarwady Region**  
**Ayeyarwady Division, Union of Myanmar**

2012 - 2013

130.5

**Total**

**6148.83**

-The Road is situated at Pantanaw - Shwe Laung -  
Wakema Flatland area of the Ayarwaddy Delta Region

- (5) Mile post starting Town/Village - Pantanaw Town (Pantanaw - Wakema Road)
- (6) Mile post ending Town/Village - Wakema Town (Pantanaw - Wakema Road)
- (7) Road crossing at Town/  
Village, River and stream - Shwe Laung Village (21/0 Mile)  
- Kalake Kyonepatote Village (23/6 Mile)  
- Kankwin Village (26/3 Mile)  
- Aukyun Village (27/0 Mile)  
- Kyakhatkone Village(30/1 Mile)  
- Kyonetone Village (30/3 Mile)  
- Thegone Village (31/2 Mile)  
- NgetPyawSu Village (31/7 Mile)  
-TaungNgu ChaungPyar Village (30/0Mile)  
- Oo Gytaw Village (35/0 Mile)  
- Htaw Kanwet Village (35/2 Mile)  
- Tayuktan Village (35/5 Mile)
- (8) Borders - The Road link with  
ShweLaung Town at the East  
Kyun Kone Town at the West  
Wakema Town at the South  
Pantanaw Town at the North
- (9) Road construction material - Nil
- (10) Miles post - Yes (Concrete post)
- (11) Furlong post - Yes (Timber post)
- (12) Road boundary pillar - Yes (Timber post)
- (13) Kind of Road - attached
- Length of Road
- Width of Road



**The Project of Site Survey For Roads in Ayeyarwady Region  
Ayeyarwady Division, Union of Myanmar**

- (14) Formation width - 40 Ft
- (15) Embankment Height - 8 Ft (Average)
- (16) Road Cross Section - attached herewith
- (17) Road Shoulder
- | <u>Type</u> | <u>Width</u>   | <u>Thickness</u> |
|-------------|----------------|------------------|
| Earth       | 3Ft both sides | 6 inches         |
- (18) Road alignment map - Attached
- (19) Pipe culvert/Out let pipe - No.
- (20) No. of bridge on the Road - Attached
- (21) Retaining wall - No.
- (22) Road side drain type
- | <u>Left/Right of road</u> | <u>Length</u>         | <u>Width</u> | <u>Depth</u> |
|---------------------------|-----------------------|--------------|--------------|
| Right (Irrigation Dept;)  | 15 Miles<br>1 Furlong | 100 Ft       | 15 Ft        |
- (23) Geometric Design

(Than Win)  
Asst. Engineering (Civil)  
Public Works  
Wakema Town

Pantanaw-Shwe Laong-Wakema(Union Highway)

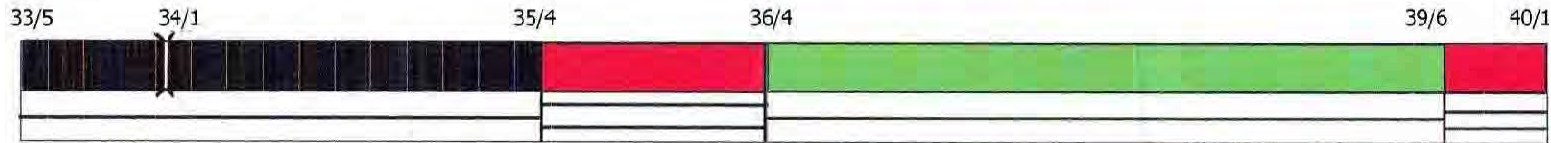
ROAD NAME - Road no.(10) Bogalay - Mawlamyine Kyun - Kyaunmangae - Wakema - Myaung Mya (Pantataw- Shwelong - Wakema Road piece)

Division/ State - Ayeyarwady Division

Length of Road - Mile 33/5 - 41/1 (6 mile 4 furlong)

District - Myaung Mya

Township - Wakema



Head Office Legend

- Paved Road
- Macadam Road
- Unpaved Road
- Earth Road
- Good
- Fair 1
- Bad

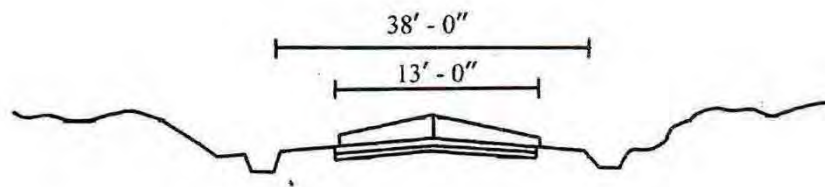
Ayeyarwady Legend

- Paved Road
  - Sub-Base Second Layer
  - Sub-Base First Layer
  - 2nd Sub-Base Second Layer
  - 2nd Sub-Base First Layer
  - Chaun Macadam Road
  - MIX Road
  - Earth Road
- Macadam Road (includes Sub-Base Second Layer and Sub-Base First Layer)
- Unpaved Road (includes 2nd Sub-Base Second Layer, 2nd Sub-Base First Layer, Chaun Macadam Road, MIX Road, and Earth Road)

NO.	Type of Roads	Good	Fair	Bad	Total	wide of Road	Remark
1	Paved Road		1 - 7	-	1 - 7	12'	1 furlong bridge
2	Macadam Road	1 - 3	-	-	1 - 3		
3	Unpaved Road		3 - 2	-	3 - 2		
4	Earth Road						
	Total	1 - 3	5 - 1	-	6 - 4		

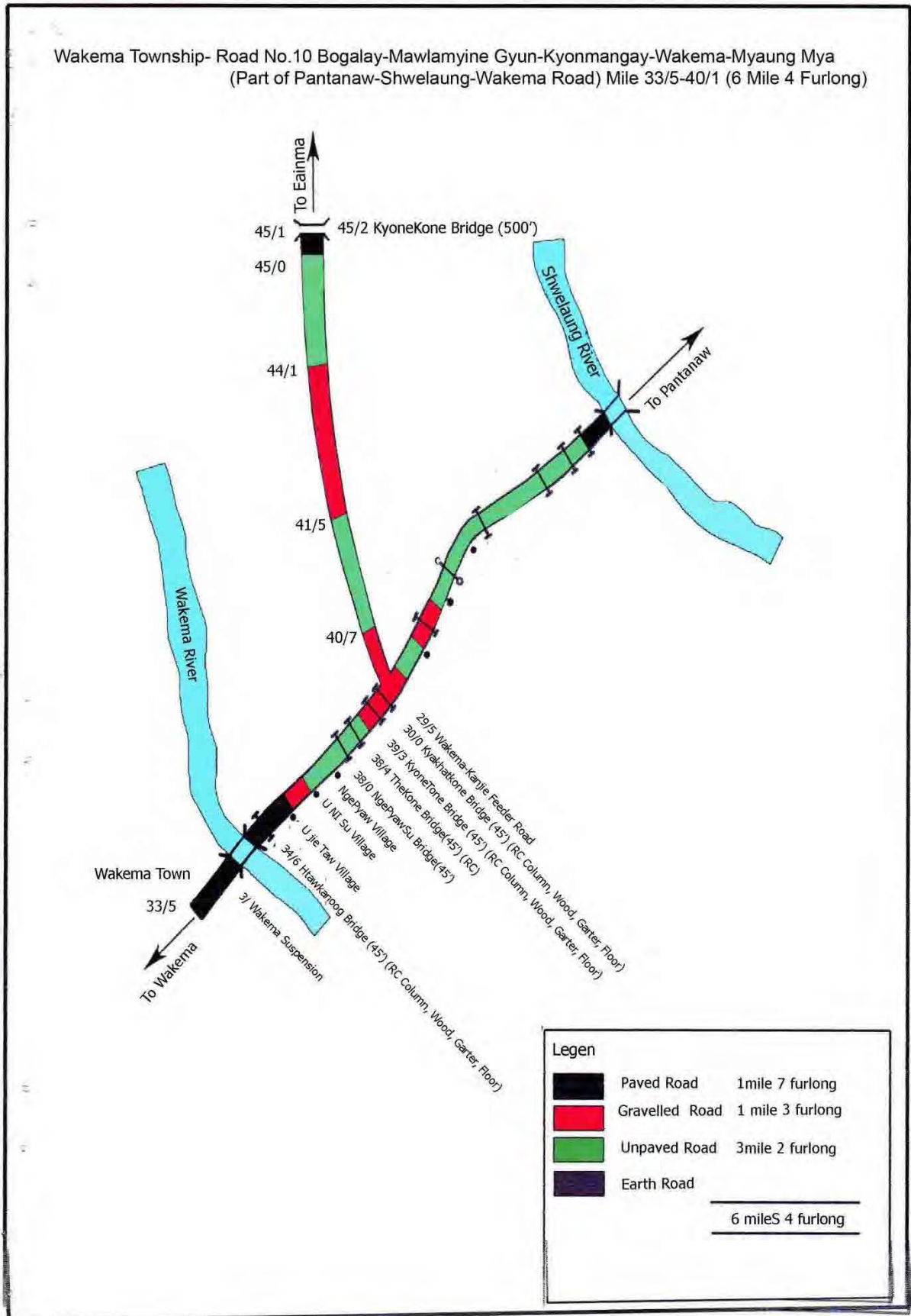
( သန်းဝင်း )  
ထက်ထောက်အင်ဂျင်နီယာ ( ဖြူဖြူ )  
ပြည်သူ့ဆောက်လုပ်ရေးလုပ်ငန်း  
ဝါးလယ်မြို့

Road Cross Section Between Mile (33/5) and (40/1)



( သန်းဝင်း )  
လက်ထောက်အင်ဂျင်နီယာ ( ဗြူဖြူ )  
ပြည်သူ့ဆောက်လုပ်ရေးလုပ်ငန်း  
ဝါးခယ်မမြို့

The Project of Site Survey For Roads in Ayeyarwady Region  
Ayeyarwady Division, Union of Myanmar



**20. Number of Bridge Along the Road**

Sr	Bridge Name	Bridge No.	Length	Width	Type	Year of Completion	Capacity (Tons)
1.	Wakema Bridge	34/1	3020'	24'	Bailey Cable	2000	36
2.	Htaw Kanuet	34/6	35'	14'	Wooden Bridge	1993	5
3.	Ngapyawsu Bridge	38/0	108'-0"	17'-0"	RPT Frame RC concrete	2004	20
4.	Thaegone Bridge	38/4	45'-0"	14'-0"	RC concrete	2008	24
5.	Kynetone Bridge	39/3	35'-0"	14'-0"	Wooden Bridge	2003	5
6.	KyatKhekGone	39/7	35'-0"	14'-0"	Wooden Bridge	2003	5

**Myaungmya District**  
**Wakema Township**  
**Road data**

1. Name of Road - Route No.(10), Bogalay – Mawlamying-Gyun- Kyunema Ngae  
-Wakema - Myaung Mya Road  
(Wakema - Kangyi Road Section)
- Length of Road - 40/1 - 45/2 Mile (5 Miles 1 Furlong)
2. “Ka” list registered road - Yes
3. Type of Road - Maid Crossing Road.  
No. 15 (Wakema- Kangyi Road Section)
4. History of Road - In 1991 (January to May), earth embankment of (Wakema -  
Kangi Road Section) was constructed under the supervision of  
Wakema Township Law and Order Restoration Council with the  
contribution of Community.  
Stone laying was done layer by layer between 40/1 to 45/2 Miles.

**Yearly Budget Allotments**

<u>Budget Year</u>	<u>Kyat (Million)</u>
1992 - 1993	3.7695
1993 - 1994	3.53
1994 - 1995	2.00
1995 - 1996	1.50
1996 - 1997	-
1997 - 1998	-
1998 - 1999	-
1999 - 2000	3.00
2000 - 2001	7.00
2001 - 2002	5.00
2002 - 2003	5.00
2003 - 2004	5.00
2004 - 2005	25.0
2005 - 2006	
2006 - 2007	35.9
2007 - 2008	21.8
2008 - 2009	30.0
2009 - 2010	-
2010 - 2011	-
2011 - 2012	-

2012 - 2013

170.0

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**318.4995**

- Wakema - Kangyi Road is situated at flatland of the Delta region.
- 5. Mile post starting (Town/Village) - Wakema Town (Wakema - Kangyi Road)
- 6. Ending Mile post of (Town/Village) - Kyungone (Wakema - Kangyi Road)
- 7. Road crossing at Town/ Village, Streams and Rivers -
  - Toyoketan Village (34/2 Mile)
  - Htawkanwat village (34/3 Mile)
  - U Gyi Taw Village (35/2 Mile)
  - Taungau Thaphyu Village (36/7 Mile)
  - Ngapyawsu Village (38/0 Mile)
  - Thaegone Village (38/3 Mile)
  - Kyonetone Village (39/2 Mile)
  - Kyarkhat Gone Village (39/5 Mile)
  - Aukyun Village (44/0 Mile)
  - Yaelein Village (45/0 Mile)
  - Kyungone Village (45/1 Mile)
- 8. Borders - The Road link with. Shwelaung Town, Kyaungone Town, at West & North Wakema Town at East & South
- 9. Road construction materials - No
- 10. Mile post - Have (Concrete Type)
- 11. Furlong post - Have (Wooden Type)
- 12. Road boundary Pillar - Have (Wooden Type)
- 13. Kind of Road - Attached here with  
Length of Road -  
Width of Road -
- 14. Formation Width - 30 Ft

**The Project of Site Survey For Roads in Ayeyarwady Region  
Ayeyarwady Division, Union of Myanmar**

15. Embankment Height - 6 Ft (Average)
16. Road crossing (transverse) Map - Attached here with

17. (Road Shoulder)	<u>Type</u>	<u>Width</u>	<u>Thickness</u>
	Texture of Soil (Earth Road)	3Ft each side	6 Inches

18. Road alignment map - Attached herewith
19. Pipe culvert/Outlet pipe - No
20. No. of bridge on the Road - Attached herewith
21. Retaining wall - No

22. Road side drain type	Left/right of road	length	width	depth
	Type			

23. Geometric Design

(Than Win)  
Asst. Engineering (Civil )  
Public Works  
Wakema Town



Wakema-Kan Gyi Road (Union Road)

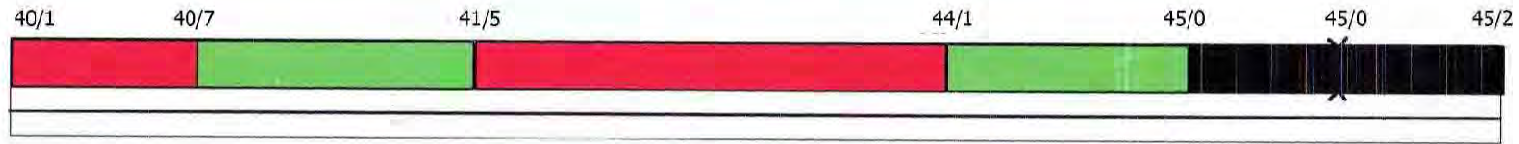
ROAD NAME - Road no.(10) Bogalay - Mawlamyine Kyun - Kyaunmangae - Wakema - Myaung Mya (Wakema - Kanjyi Road piece)

Division/ State - Ayeyarwady Division

Length of Road - Mile 40/1 - 45/2 (5 MILE 1 furlong)

District - Myaung Mya

Township - Wakema



Head Office Legend

- Paved Road
- Macadam Road
- Unpaved Road
- Earth Road
- Good
- Fair
- Bad

Ayeyarwady Legend

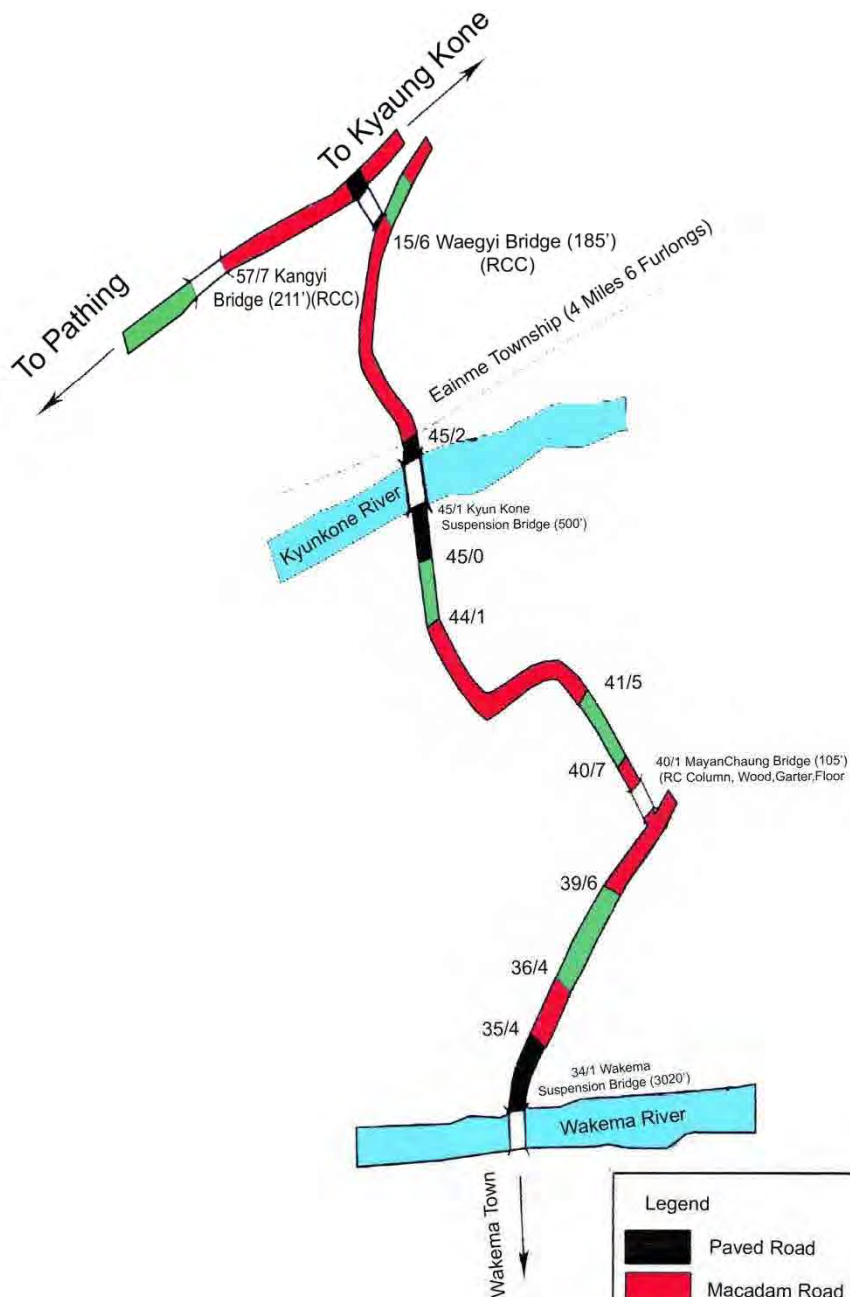
- Paved Road
  - Sub-Base Secound Layer
  - Sub-Base First Layer
  - 2nd Sub-Base Secound Layer
  - 2nd Sub-Base First Layer
  - Chaun Macadam Road
  - MIX Road
  - Earth Road
- Macadam Road (Sub-Base Secound Layer and Sub-Base First Layer)
- Unpaved Road (2nd Sub-Base Secound Layer, 2nd Sub-Base First Layer, Chaun Macadam Road, MIX Road, and Earth Road)

NO.	Type of Roads	Good	Fair	Bad	Total	wide of Road	Remark
1	Paved Road		0 - 1		0 - 1	12'	1 Furlong bridge
2	Macadam Road		3 - 2		3 - 2		
3	Unpaved Road		1 - 5		0 - 5		
4	Earth Road						
	Total		5 - 0		5 - 0		

( သန့်စင် )  
လက်ထောက်အင်ဂျင်နီယာ ( ဖြူမြ )  
ပြည်သူ့ဆောက်လုပ်ရေးဌာန  
ဝါးခယ်ပမြို့

The Project of Site Survey For Roads in Ayeyarwady Region  
 Ayeyarwady Division, Union of Myanmar

Wakema Township- Road No.10 Bogalay-Mawlamying Gyun-Kyunmangae-Wakema-Myaung Mya  
 (Part of Wakema-Kangyi Road) 40/1 - 45/2 Mile



Legend					
<span style="display:inline-block; width:15px; height:15px; background-color:black; border:1px solid black;"></span>	Paved Road				
<span style="display:inline-block; width:15px; height:15px; background-color:red; border:1px solid black;"></span>	Macadam Road				
<span style="display:inline-block; width:15px; height:15px; background-color:green; border:1px solid black;"></span>	Unpaved Road 0 Mile 4 Furlong				
<span style="display:inline-block; width:15px; height:15px; background-color:purple; border:1px solid black;"></span>	Earth Road				
	<table style="margin-left: auto; margin-right: 0;"> <tr> <td style="border-bottom: 1px solid black; width: 20px;"></td> <td>1 Mile 1 Furlong</td> </tr> <tr> <td style="border-bottom: 1px solid black; width: 30px;"></td> <td>1 Mile 5 Furlongs</td> </tr> </table>		1 Mile 1 Furlong		1 Mile 5 Furlongs
	1 Mile 1 Furlong				
	1 Mile 5 Furlongs				

**20. Number of Bridge along Road**

**The Project of Site Survey For Roads in Ayeyarwady Region  
Ayeyarwady Division, Union of Myanmar**

Sr.	Bridge Name	Bridge No.	Length	Width	Type	Year of Completion	Capacity (Tons)
1.	Mayan chaungBridge	1/14	105'-0"	14'-0"	RC Concrete Timber decking	1993	5
2.	Kyun Kone Bridge	1/45	500'-0"	14'-0"	Suspension Bridge	2000	36

**Detailed Information of The Road**

**The Project of Site Survey For Roads in Ayeyarwady Region  
Ayeyarwady Division, Union of Myanmar**

1. Name of Road - Bogalay – Mawlamying-Gyun - Wakema - Myaung Mya

(Section of Einme Township ) (10 Miles 4 Furlong)

2. "KA" list registered Road - Yess

3. Type of Road (Union Highway) - Not Main Crossing Road

4. History of the Road - Earth embankment for Bogalay – Mawlamying-Gyun - Kyunemangae - Wakem- Myaung Mya (Section of Einme Township) was constructed with the contribution of community on 3.4.1992. Laying for 1st layer of sub-base of unpaved road was started in 1991 to 1992 budget year and completed in 1995 - 1996 budget year. Laying for 2nd layer of sub-base was started on 1994-1995 and completed in 2003-2004 budget year. Laying of Base Course of 1st layer was started on 1998 - 1999 and completed in 2009-2010 (10 miles 1 Furlong). Laying of Base Course 2nd layer and laying of asphalt was started in 2006-2007. Laying of base course 2<sup>nd</sup> layer (7 furlong) and laying of asphalt (3 Miles 1½ Furlong) were completed in 2011-2012.

- In 2002-2003, No. 1/54 Kyuntone bridge and No. 1/2, Thar Kwin bridges were re-constructed from wooden bridge to RC Concrete bridge and in 2004-2005 No. 1/53, Kyarnaphue bridge was constructed to (15'x14') bridge respectively.

-At Mile 49/7 (Wakema-Kangyi Road, 15/6 Mile), bridge no. 1/16 Waegywa bridge (185'x13') was re-constructed as (wood + Bailey) completed on 1994. Re-construction of RC concrete (200'x24') bridge from the bridge (185'x13'), (wood+ Bailey) was started

**The Project of Site Survey For Roads in Ayeyarwady Region  
Ayeyarwady Division, Union of Myanmar**

on 2008-2009 and bored pile foundation, pile cap and bridge frame were completed on 2011-2012. On 2012-2013 carry out for girder (10) nos and beam 32 nos. The construction of bridge will be completed on 2013-2014.

- Bogalay – Mawlamying-Gyun - Kyunmangae - Wakema - Myaung Mya Road (Einme Township Region) is built across the farmland of flatland.

5. Starting mile post of Town Village - Kwin Pauk Village (45/2)
6. Ending Mile post of Town/Village - Pwesar Gon Nyintan Village(55/6)

7. The Road crossing at Town

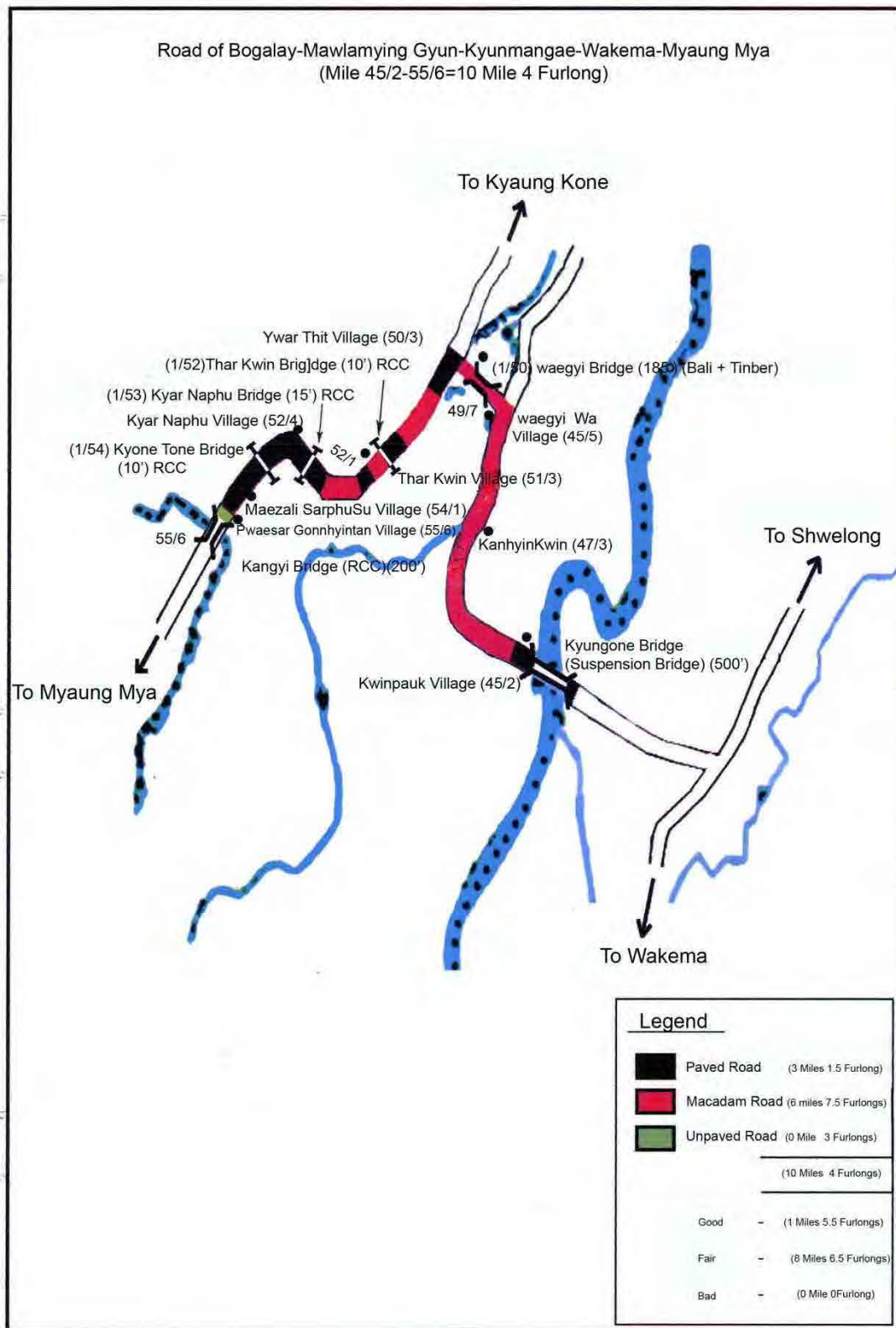
- Village/ Stream/ River - (1) Kwin Pauk Village (45/2 Mile)
- (2) Kanyin Kwin Village (47/3 Mile)
- (3) Waegywa Village (49/5 Mile)
- (4) Einmae Stream (49/7 Mile)
- (5) Ywarthit Village (50/3 Mile)
- (6) Tharkwin Stream (51/1 Mile)
- (7) Tharkwin Village (51/3 Mile)
- (8) Kyarnaphu Stream (52/1 Mile)
- (9) Kyuntone Stream (53/4 Mile)
- (10) Maezali Sarphusu Village (54/1 Mile)
- (11) Pwesar Gon Nyintan Village (55/6 Mile)

8. Borders - Starting of the road is Kwinpauk Village, Einme Township, Myaung Mya District, Ayarwaddy Region Division and ending of the road is Kan Gyi Village, Myaung Mya Township, Myaung Mya

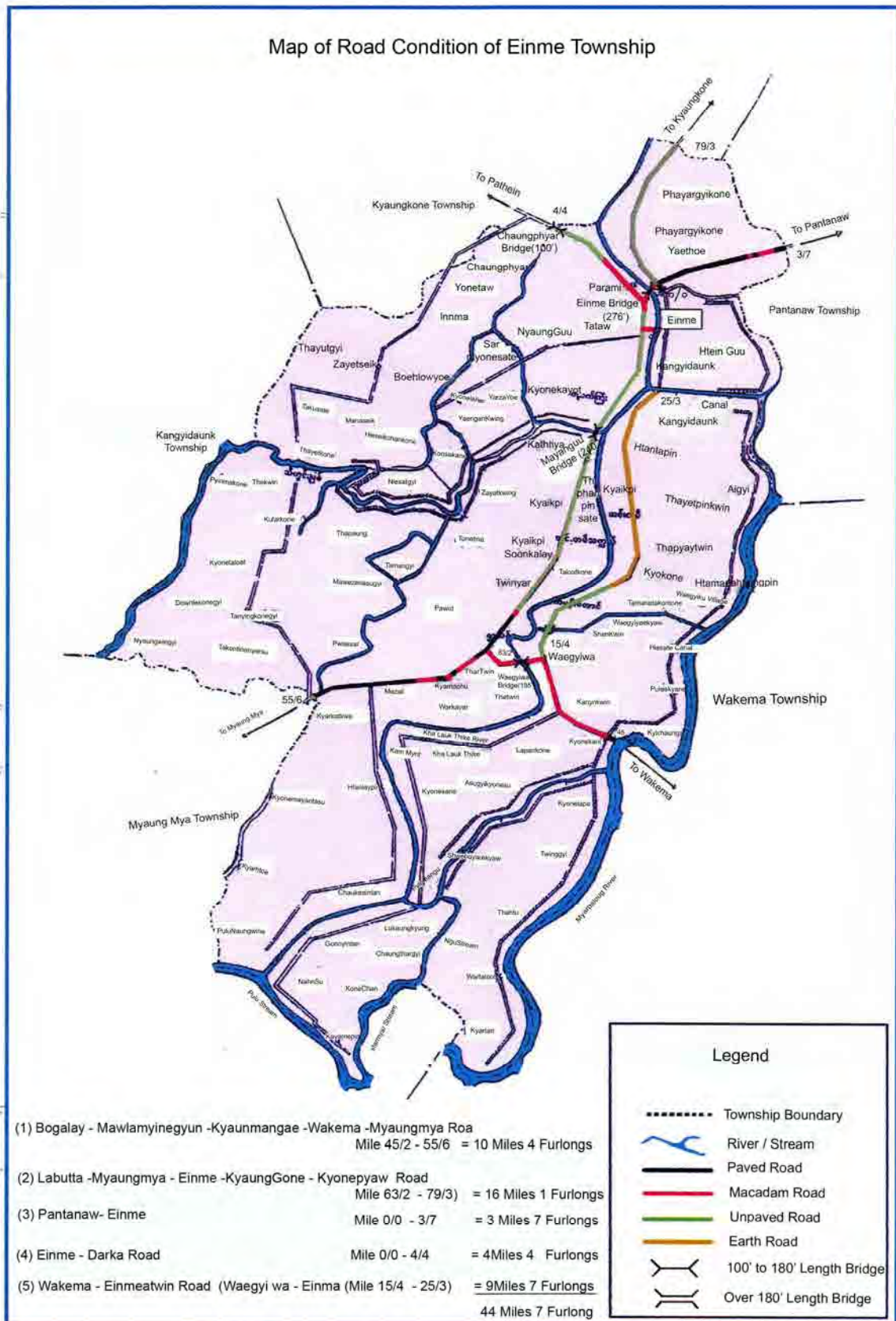
District, Ayarwaddy Region Division.

9. Road construction Materials - No products at in Einme Township
10. Mile post - Have concrete mile post
11. Furlong post - Have wooden furlong post.Starting and ending  
furlong posts of road are concrete posts.
12. Road Boundary Pillar (post) - Wooden Type.
13. Kind of Road - Attached  
Length(Mile), Width
14. Formation width - 30 Ft
15. Embankment Height - 3 Ft
16. Road cross section - Attached
17. Road shoulder - Texture of Soil Road 3 Ft
18. Road alignment map - Attached
19. Pipe Culvert/Outlet pipe - No
20. No. of bridge on the road - Attached
21. Retaining wall - Nothing special
22. Road side drain type - Nothing special
23. Geometric Design - No

The Project of Site Survey For Roads in Ayeyarwady Region  
Ayeyarwady Division, Union of Myanmar







**20. List of Bridge**

Sr.	No. Bridge	Bridge Name	Location	Length	Width	Type	Constructed Year	Capacity (Tons)
1.	1/50	Wae Gyi Wa		185'-0"	13'-0"	Timber+ Bailey	1994	3
2.	1/52	Thar Kwin Bridge		500'-0"	14'-0"	Suspension Bridge		36
3.	1/53	Kyar NaPhu		15'-0"	15'-0"	RC	2005	13
4.	1/54	Kyone Tone		10'-0"	10'-0"	RC	2003	13

**Detailed Information about Road**

1. Name of Road - RouteNo.10 Bogalay – Mawlamying-Gyun - Kyunmangae - Wakama  
- Myaung Mya  
(Section of the Einme - Myaung Mya Region)
2. “Ka” list registered road - Under construction
3. Type of Road - Main Crossing Road (Serial No.9)
4. History of the road Construction was started with the community contribution in budget year 1989 - 1990.  
From mile 55/6 to 66/0 is flatland parts.
5. Miles post Starting - Kangyi Village (55/6 Mile)  
Town/Village
6. Mile Stone ending - Kwe Lway Village (66/0 Mile)  
Town/Village
7. The Road crossing at -  
town/village of rivers , streams and Drain
  - (1) Kangyi Village (55/6 Mile)
  - (2) Thapyae Chaung Village (58/5 Mile)
  - (3) Thamin Chan Village (59/2 Mile)
  - (4) Madaw Pin Village (60/3 Mile)
  - (5) Kan Chaung Village (61/2 Mile)
  - (6) Kyone War Village/ Chaung Phyar Village(62/2)
  - (7) Danoung Chaung Village (62/7 Mile)
  - (8) Sittapin Village (53/4 Mile)
  - (9) Kyar Phyu Ngone Lakpan Vilalge (64/6 Mile)
  - (10) Kwe Lwe Village (66/0 Mile)

Sitdapin Stream, Kan Chaung Drain, Thamin Chan Drain, Thapyae  
Chaung Drain, NgaPon Chaung DrainKangyi Stream

8. Borders - The Road starting at 55/6 mile of Kangyi Village (Einme Township Border) and ending to 66/0 mile of (Labutta Township.)
9. Road Construction Material- Stones and Laterites can be obtained from Mwe House Village and YekyawYesai village. These can be produced about 5 months during summer and winter season. In Labutta Township 8/0 mile to 14/0 mile, Between 4 Furlong of left and right side of road can excavate the stones. Product amount will not be Estimated.
10. Miles post - Have mile post (concrete)
11. Furlong post - Have Furlong post (concrete)
12. Road boundary post- Have, (Wooden/Timber)
13. Type of road - Attached  
Length mile, Width
14. Formation width - 34' which section need to be increased embankment high. 35' which section no need to be increased embankment high.
15. Embankment height - 2' - 0" (According to the budget allotment ,increasing the embankment high by section .)
16. Road Cross Section - Attached
17. Shoulder - At Hill (high land) area, shoulder width 3ft and thickness 6".  
(Road Shoulder) At flatland area shoulder width 3ft and 6" thickness.  
In (2011-2012) (2012-2013) Paved road shoulder were constructed by laterites, 3' width and 6" to 9" thickness.
18. Map of alignment of road - Attached
19. Pipe Culvert/Outlet pipe - Attached
20. No. of bridge along with road- Attached

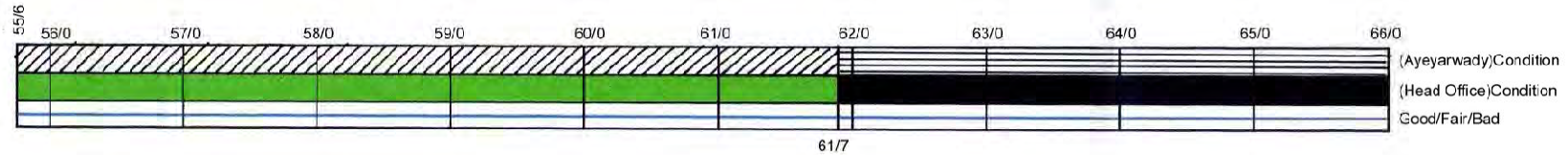
**The Project of Site Survey For Roads in Ayeyarwady Region  
Ayeyarwady Division, Union of Myanmar**

21.	Retaining Wall	-	Nothing special		
22.	Road side drain	Hill Part area side drain		Width	Depth
		22/0-41/4 Mile		3'+2'	1'-6" to 4'-0"
				2	
		Out let drain		Width	Depth
				1'-6"	1'-0" to 2'-0"
		For 2011-2012 side drain		Width	Depth
				4'-6"	4'-0"
		For 2012-2013 side drain		Width	Depth
				4'-6"	4'-0"
		Dig by Excavator			
23.	Geometric Design	-	Nil		

### Road Condition Till (31-3-2012)

Name of Road- Road No.10 Bogalay-Mawlamying Gyun-Kyunmangae  
Wakema-Myaung Mya (Part of Einme-Myaung Mya)  
Ddivision/State- Ayeyarwady Region Division  
District - Myaung Mya District

Length of Road - 55/6-66/0 Miles=10 Miles 2 Furlong  
Township - Myaung Mya Township



**Legend (Head Office)**

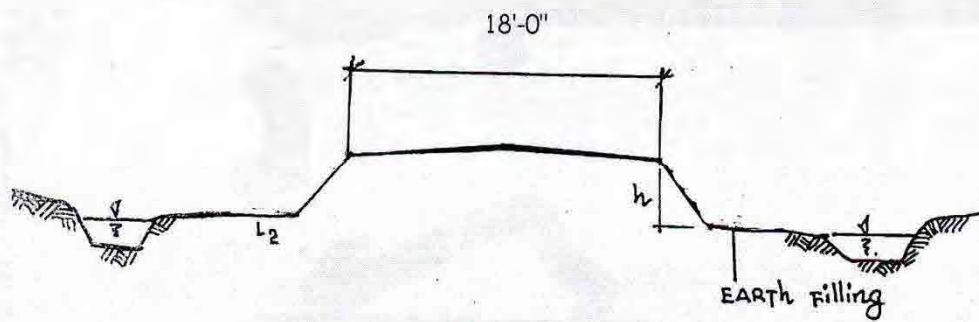
- Paved Road
- Good
- Macadam Road
- Fair
- Unpaved Road
- Bad

**Legend (Ayeyarwady)**

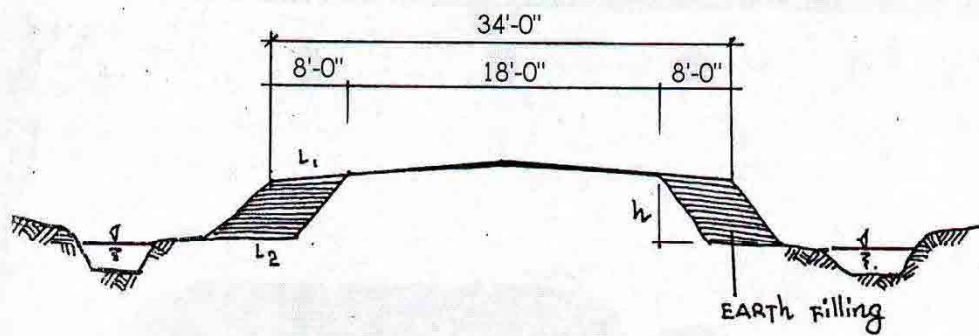
- Paved Road
  - Sub-base Second Layer
  - Sub-base First Layer
- } Unpaved Road

Sr	Type of Road				Total	Width
		Good	Fair	Bad		Width
1	Paved Road	-	4 Miles 1 Furlong	-	4 Miles 1 Furlong	12'/14'/18'
2	Unpaved Road	-	6 Miles 1 Furlong	-	6 Miles 1 Furlong	12'
3	Macadam Road	-	-	-	-	-
	<b>Total</b>	-	10 Miles 2 Furlongs	-	10 Miles 2 Furlongs	-

Cross Section Before Development of Road  
(55/6-66/0 Mile)

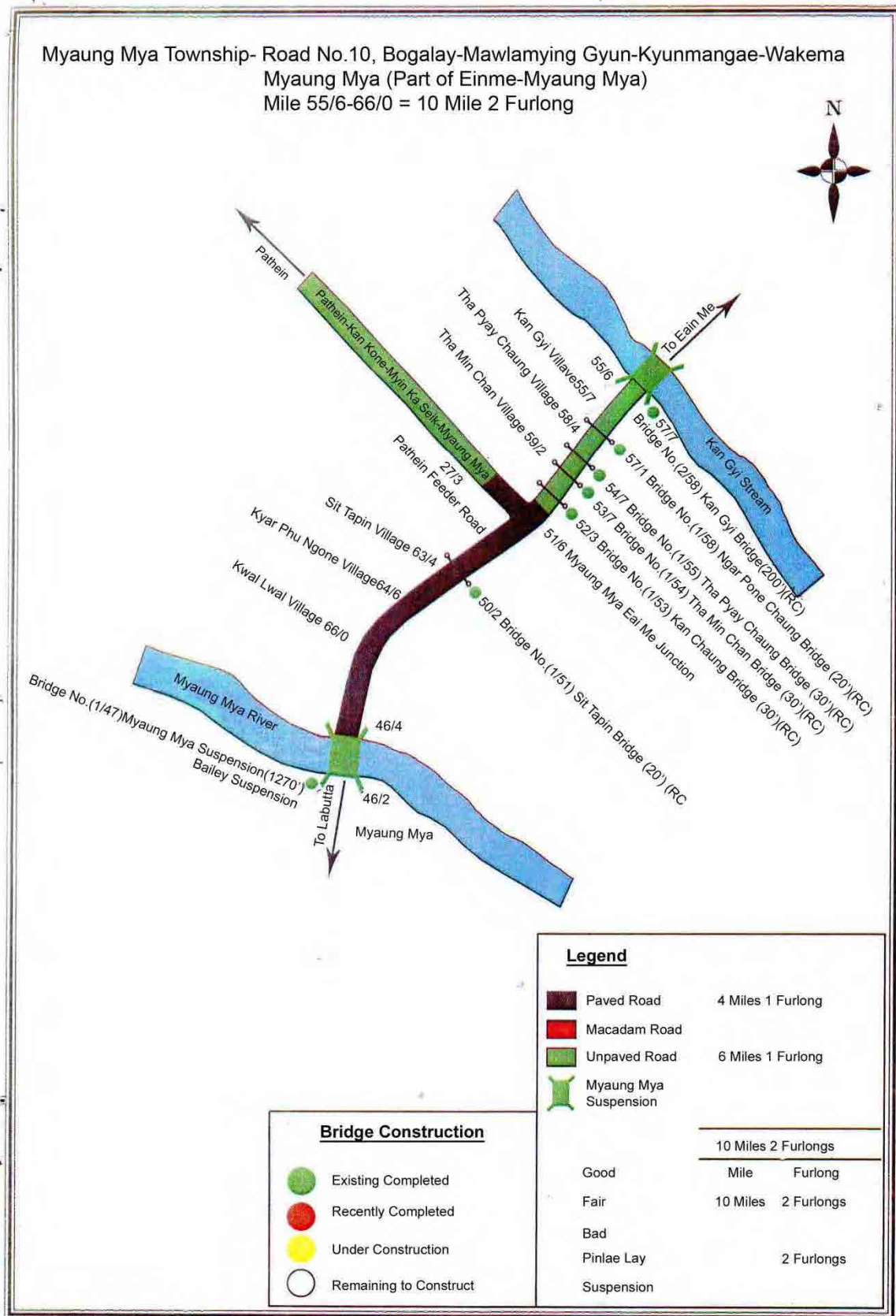


Cross Section After Development of Road



လက်ထောက်အင်ဂျင်နီယာ (မြို့. ပြ)  
ပြည်သူ့ဆောက်လုပ်ရေးလုပ်ငန်း  
ဧပြေစာမူဖြူ

The Project of Site Survey For Roads in Ayeyarwady Region  
 Ayeyarwady Division, Union of Myanmar





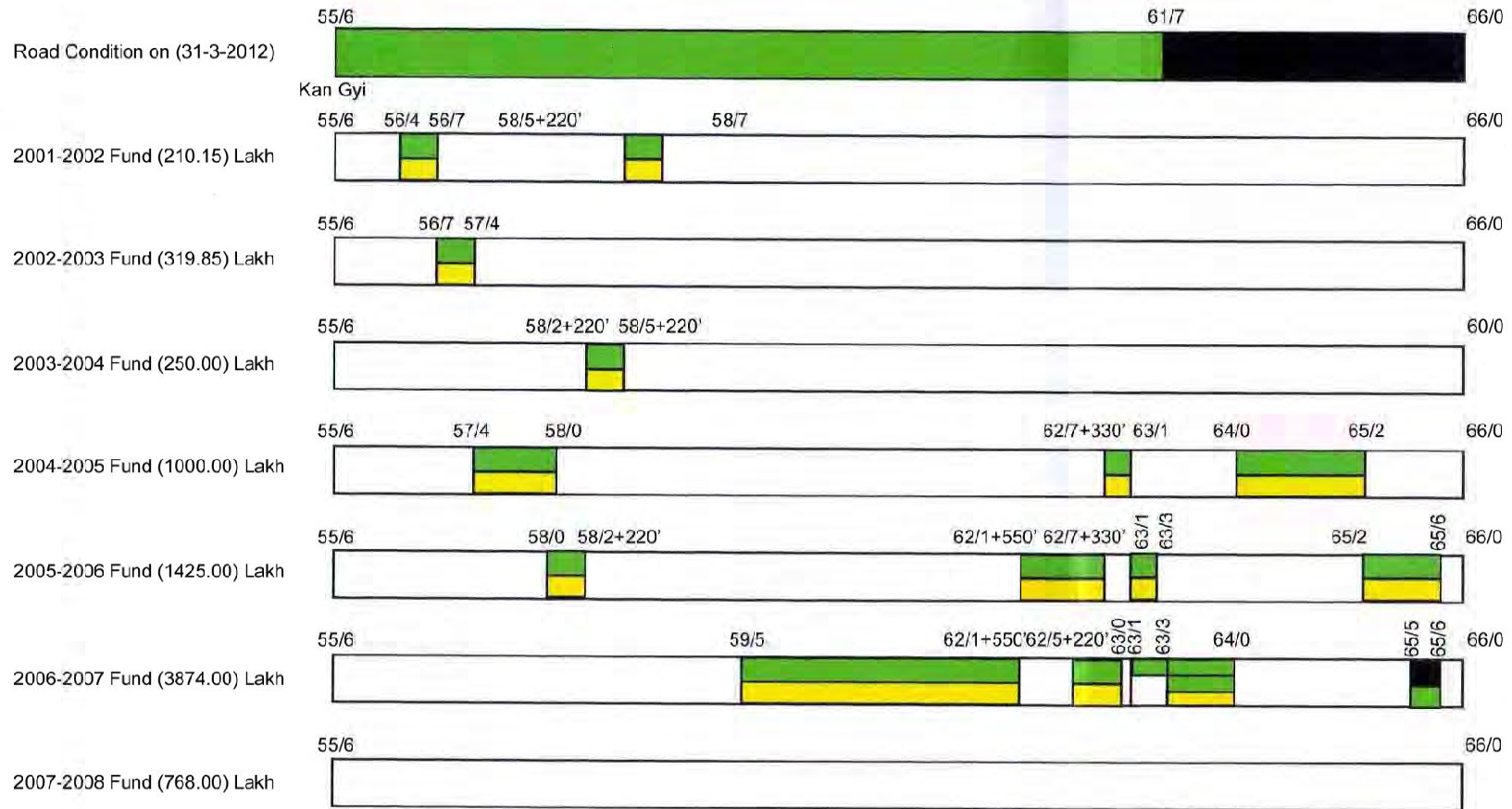
**19. List of Pipe Culverts**

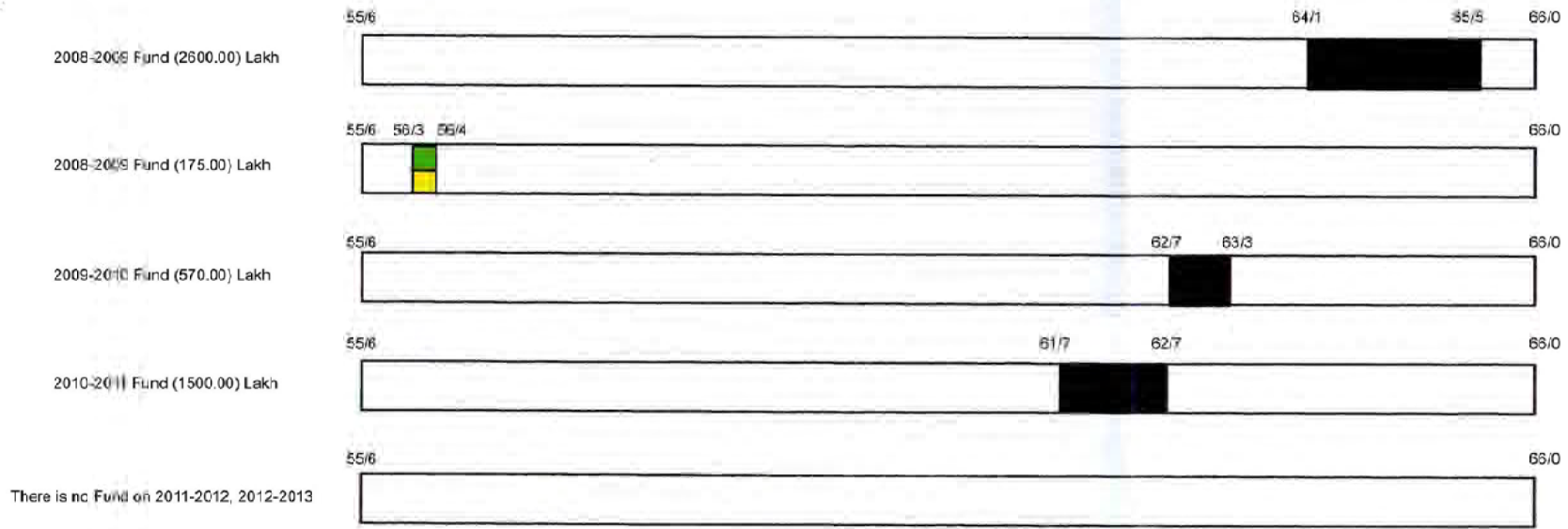
<b>Sr.</b>	<b>Bridge No.</b>	<b>Type</b>	<b>Location</b>	<b>Measurement</b>
1.	1/63	R.C Culvert	62/2	2'-0" x 30'-0"
2.	2/63	R.C Culvert	62/4	2'-0" x 30'-0"
3.	1/64	R.C Culvert	63/1	2'-0" x 30'-0"
4.	1/65	R.C Culvert	64/2	2'-0" x 30'-0"
5.	2/65	R.C Culvert	64/4	2'-0" x 30'-0"
6.	1/66	R.C Culvert	65/1	2'-0" x 30'-0"
7.	2/66	R.C Culvert	65/2	2'-0" x 30'-0"
8.	1/49	R.C Culvert	65/5	2'-0" x 28'-0"

**20. List of Bridges**

<b>Sr.</b>	<b>Location Milepost</b>	<b>Bridge Name</b>	<b>Bridge No.</b>	<b>Length</b>	<b>Width</b>	<b>Type</b>	<b>Year of the Completion</b>	<b>Capacity</b>
1.	55/6	Kangyi Bridge	1/56	200'-0"	24'-0"	R.C	2007	36
2.	56/4	Ngarponchaung	1/67	20'-0"	24'-0"	R.C	2008	36
3.	58/6	Thapyaechaung	1/59	30'-0"	24'-0"	R.C	2007	36
4.	29/6	Thaminchan	1/60	30'-0"	22'-0"	R.C	2005	30
5.	61/2	Kanchaung	1/62	30'-0"	24'-0"	R.C	2003	36
6.	63/3	Sittapin Bridge	1/64	20'-0"	16'-0"	R.C	1998	36

Road No. 10 Bogalay-Mawlamying Gyun-Kyunmangae-Wakema-Myaung Mya  
(Part Einme-Myaung Mya) (Mile 55/6-66/0)= 10 Mile 2 Furlong  
Budget Allotment and Task Completion Up to Budget Year





Legend

- Paved Road
- Macadam Road
- Unpaved Road
- Developing the Embankment of Earth Road

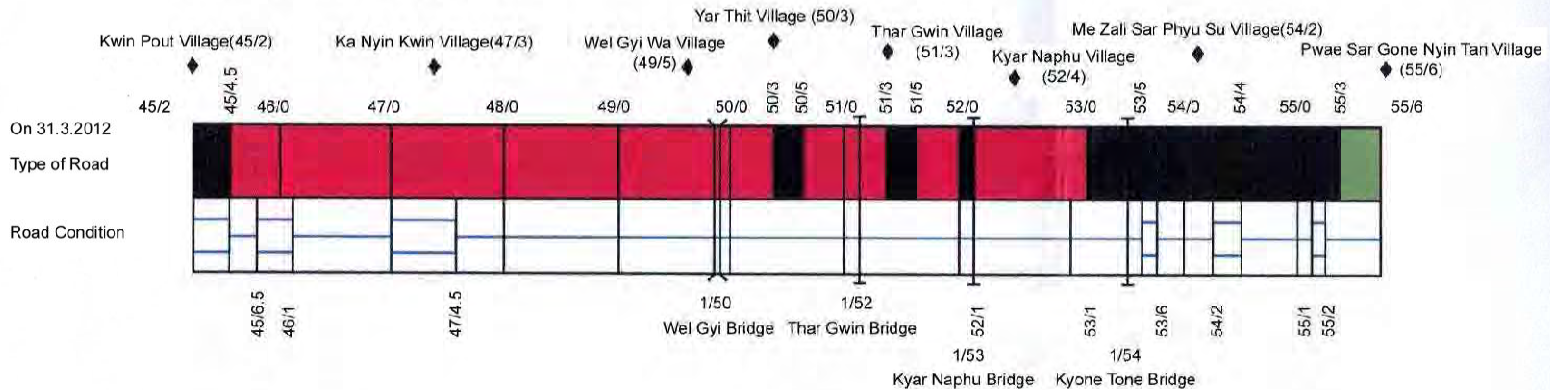
  
 သက်ဆောက်အင်ဂျင်နီယာ (မြို့၊ မြို့)  
 ပြည်သူ့ဆောက်လုပ်ရေးလုပ်ငန်း  
 ခြောက်မြေမြို့

**Type of Road in Einme Township**

Sr.	Particular	Paved road	Macadam road	Unpaved road	Earth road	Total miles-furlong	Remark
1.	1 Bogalay-Mawlamying Gyun-Kyunmangae- Wakema-Myaungmya	3-1½ (12')	6-7½ (12')(18)	0-3 (12')	-	10-4	
2.	Labuttar-MyaungMya- Einme-KyaungKone- Kyonpyaw	0-6 (12')(18)	0-3 (12')	15-0 (12')(14)	-	16-1	
3.	Pantanaw - Einme	3-1 (12')	0-6 (12')			3-7	
4.	Einme - Darka		1-4 (12')	3-0 (12')(14)		4-4	
5.	Wakema - Einme			3-2 (12')	6-5 (12')	9-7	

### Road of Bogalay-Mawlamying Gyun-Kyunmangae-Wakema-Myaung Mya

Township Name - Township Name  
Length of Road - 45/2 - 55/6 Miles = 10 Miles 4 Furlongs

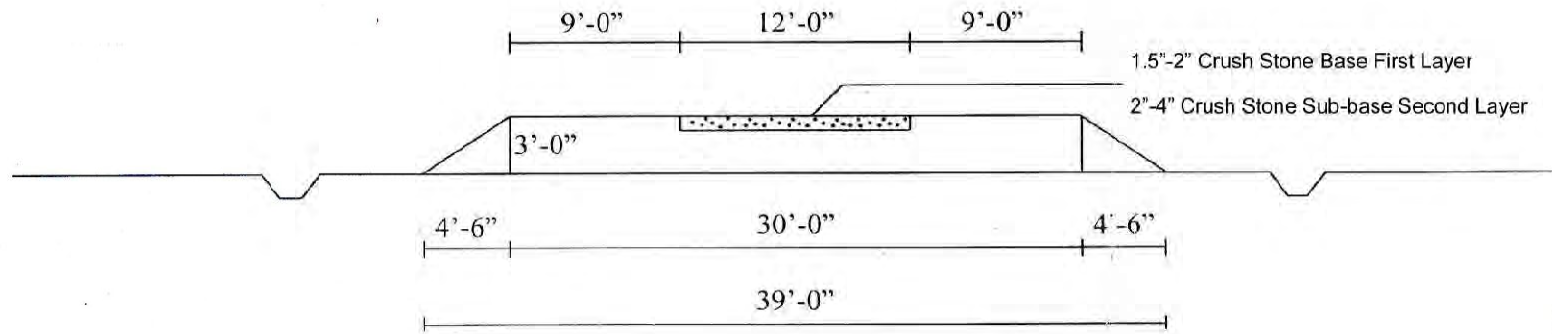


- Paved Road (3 Miles 1.5 Furlongs)
- Macadam Road (3 Miles 7.5 Furlongs)
- Unpaved Road (0 Mile 3 Furlongs)
- Earth Road
- Good (1 Mile 5.5 Furlongs)
- Fair (8 Miles 6.5 Furlongs)
- Bad

လက်ထောက်အင်ဂျင်နီယာ (မြို့ပြ)  
 မြို့ပြအဖွဲ့အစည်းအဖွဲ့ဝင်  
 အိမ်မိမိ

Road Cross Section  
of  
Bogalay-Mawlamying Gyun-Kyunmangae-Wakema-Myaung Mya

(Einme Township)



၀၇  
လက်ထောက်အင်ဂျင်နီယာ (မြို့မြ)  
ပြည်သူ့ဆောက်လုပ်ရေးလုပ်ငန်း  
အိမ်ရာမြို့

**Route No. 10, Road of Bogalay – Mawlamying-Gyun - Kyunmangae - Wakema - MyaungMya**  
**(Section of Einme - MyaungMya)**

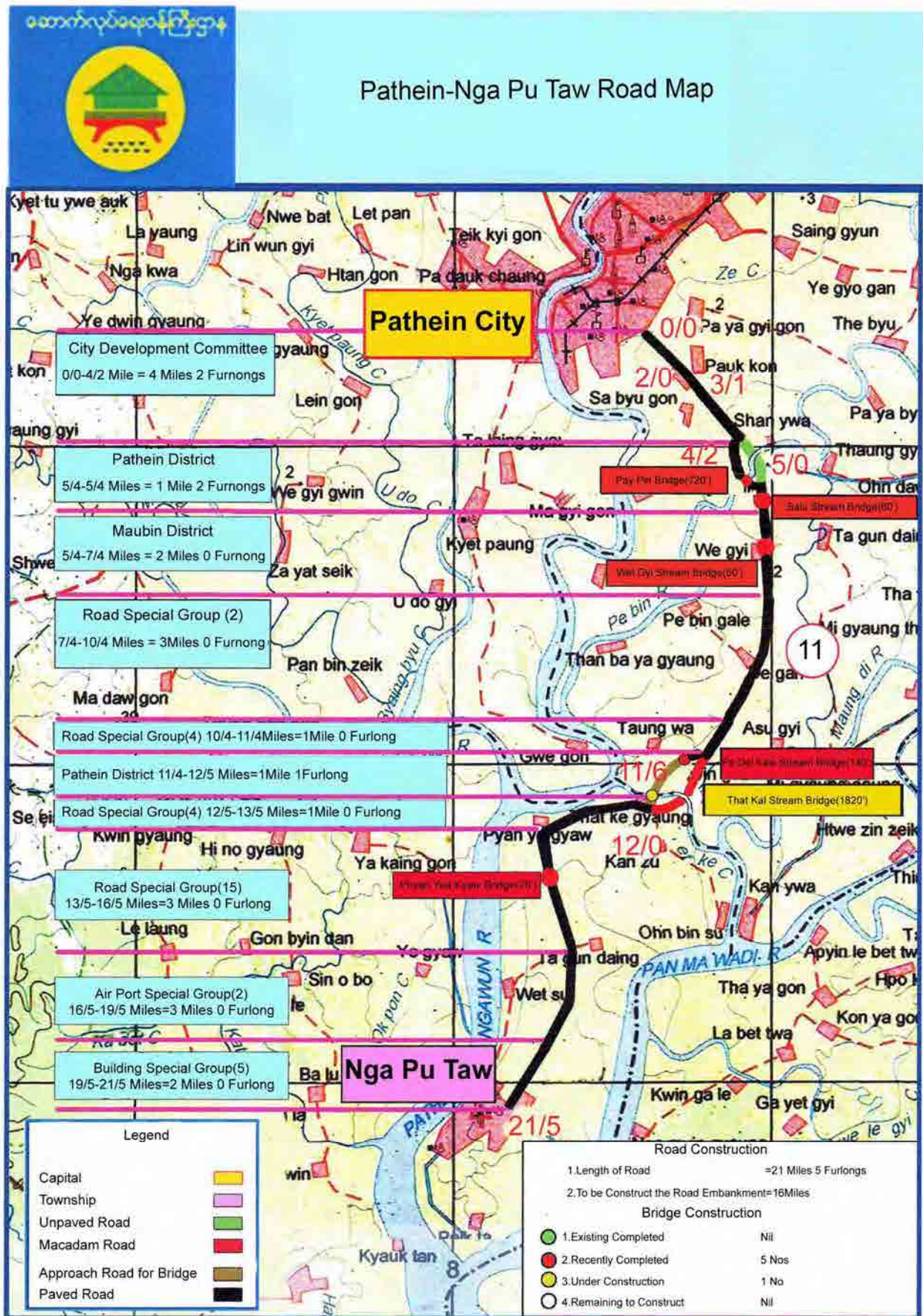
**Processing the tasks according to every budget year (Mile 55/6 - 66/0) = 10 Miles 2 Furlong**

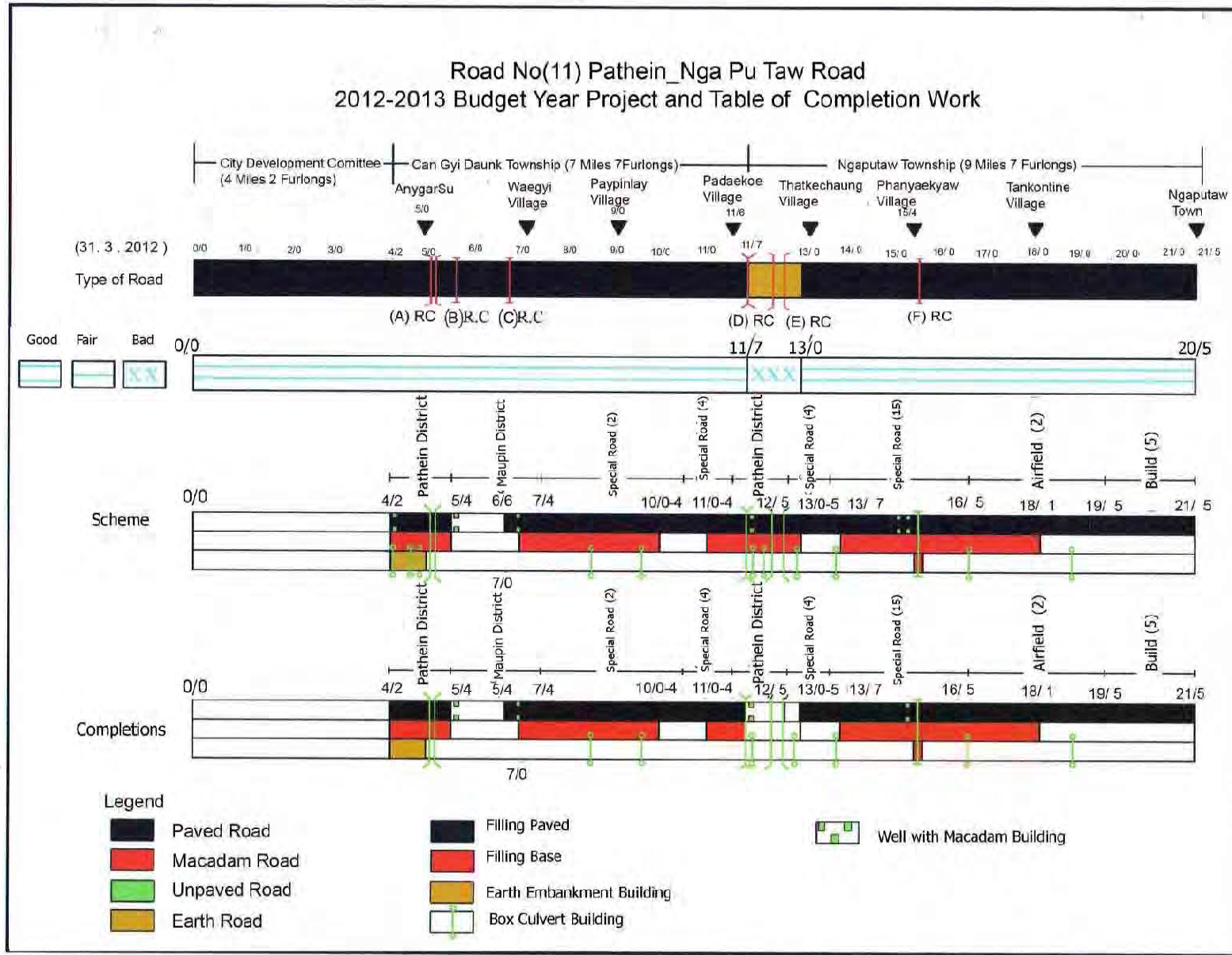
Sr.	Budget Year	Budget (Lakh)	Road Height Increased/Mile	2-4 stone sub-base 1 <sup>st</sup> layer/Mile	2-4 stone sub-base 2 <sup>nd</sup> layer/Mile	Paved road Mile	Remarks
1.	2001-2002	210.15	56/4-56/7=3F 58/5+220'- 58/7=2F & 220', Total=5F & 220'	5F & 220'			
2.	2002-2003	319.85	56/7-57/4=5F	5F			
3	2003-2004	250.00	58/2+220'- 58/5+220'=3F	3F			
4.	2004-2005	1000.00	57/4-58/0=4F 62/7+330'- 63/1=2.5F, 64/0-65/2=1M 2F Total=2M & 330'	2M & 330'			
5.	2005-2006	1425.00	58/0- 58/2+220'=1F & 440', 62/1+550'- 62/7+330'=6 F & 220', 63/1-63/3=2 F 65/2-65/6=7 F Total=2M 1F	2M 1F			
6.	2006-2007	3874.00	63/3-64/0=5F 59/5- 62/1+550'=2M 3F&110', Total = 3M &110'	3M &110'	63/1-64/0=7 F 62/5+220'- 63/0=3.3F Total=10M 0.3F	65/5- 65/6=1 F  47/4- 47/7=3 F	
7.	2007-2008	768.00	58/7-59/5 = 6 F	6F			
8.	2008-2009 2008-	2600.00 175.00	56/3-56/4 = 1F	1F	64/1- 65/5=1M 4F		

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	2009						
9.	2009-2010	570.00			62/7-63/3=4F		
10.	2010-2011	1500.00			61/7-62/7=1M		
11.							No budget
12.							No budget
	Total	12692.00	9Mile 6Furlong	1Mile 2.3 Furlong	3Mile 1Furlong		







**Summary of Road Data**

1. Name of Road - Pathein-Ngapu Taw
- Length of Road(Mile)- Mile 2/0-21/5 =19 Miles 5 Furlong
- Mile 4/2-4/7 = 0 Mile 5 Furlong (Existing road)
- 
- 20 Miles 2 Furlong

2. Union Government Road - Road No.11

3. Background history of Road- Pathein-Ngapu Taw

In 1992- 1993 budget year, Pathein east Township and Ngapu Taw Township under Leading of Township Law and Order Restoration Council, and close supervising of Engineers are built Embankment with villagers service.

Budget year	Budget Allotment	Special repair	Normal repair	Total
1993-1994	0.77	-	-	0.77
1994-1995	4.40	-	-	4.40pl
1995-1996	3.00	-	-	3.00
1996-1997	1.00	-	-	1.00
1997-1998	0.50	-	-	0.50
1998-1999	-	-	-	-
1999-2000	3.00	-	-	3.00
2000-2001	2.50	-	0.02	2.70
2001-2002	2.475	-	-	2.475
2002-2003	4.08	-	-	4.08
2003-2004	-	-	-	-
2004-2005	13.00	-	-	13.00
2005-2006	-	-	-	-

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2006-2007	-	-	-	-
2007-2008	-	-	-	-
2008-2009	-	-	-	-
2009-2010	-	-	9.38125	9.38125
2010-2011	500	-	6.5852	506.5812
2011-2012	534	400	6.69375	940.69375
2012-2013	4000	-	8.688	4008.688
<b>Total</b>	5068.725	400	31.5482	5500.2732

In Delta region of flatland according to Geographic Location , Road was constructed by crossing the farmland, rivers and streams.

5. Mile post starting -Mile post 2/0, Tha Yaung Chaung Village  
Town/ Village
6. Ending of Mile post - Mile 21/5 / Ngapu Taw Town  
Town/ Village
7. Road crossing at Town/-Village
  - (a)Tha Yaung Chaung Village Mile 2/0
  - (b)Kyat Khet Gone Village Mile 2/2-2/3
  - (c)Zayatgone Tarlanpaing Village Mile 14/3
  - (d)Oaksi Gone Village Mile 3/2
  - (e) Shan Ywar Village Mile 5/0-5/1
  - (f) Wae Gyi Village Mile 7/0
  - (g) Paypin Lay Village Mile 9/0
  - (h)Padae Kaw Village Mile 12/0

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	(i)Thakkay chaung Village	Mile 32/2
	(j) Phyan Yae Kyaw Village	Mile 15/5
	(k)Takon Taing	Mile 18/0
	(l) Ngapu Taw Town	Mile 21/5
Railway, Motor Vehicle Road	-Nil	
Rivers and streams	- Paypin river, Salu stream, Wae Gyi stream, Padae Kaw stream, Thakkay chaung river, Pyan Yae Kyaw stream.	
8. Borders	-Mile 2/0 (Tha Yaung Chaung) from Pathein Mile 21/5 (Ngapu Taw Town)	
9. Road construction materials	- Nil	
10.Mile post	- Have (concrete)	
11.Furlong post	-Have (concrete)	
12. Road boundary post	-Have (concrete)	
13. Type of Road	- <u>Paved road</u> <u>Macadam road</u> <u>Unpaved road</u> Earth road Total	
(Mile)Length and Width	18-4	0-5 1-1 20-2 12ft
14. Width of Embankment	- 34'-0", 40'-0"	
15. Height of Embankment	- 3'-6", 5'-0"	
16. Road cross section	- Attached	
17. Shoulder	<u>Type</u>	<u>width</u> <u>Thickness</u>
	solid,	3'-0" both 0'-9"
	soil (Earth)	side
18. Map of Road alignment	- Attached with supplement (B)	

19. Pipe Culvert/ Outlet Drain

Sr.	Pipe Culvert No.(Drain)	Location	Type	Length	Width
1.	2/2-2/3	2/2-2/3	concrete	4ft	20ft
2.	2/3	2/7-3/0	concrete	4ft	20ft
3.	1/4	3/0-3/1	concrete	4ft	20ft
4.	2/4	3/-2-3/3	concrete	4ft	20ft
5.		4/2-4/3	concrete	10ft	
6.		4/6-4/7	concrete	10ft	
7.		4/7-5/0	concrete	10ft	
8.		8/5-8/6	concrete	15ft	
9.		9/5-9/6	concrete	15ft	
10.		11/6-11/7	concrete	15ft	
11.		12/0-12/1	concrete	15ft	
12.		12/7-13/0	concrete	15ft	
13.		13/6-13/7	concrete	15ft	
14.		16/3-16/4	concrete	15ft	
15.		18/7-19/0	concrete	15ft	

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20. List of bridge along the road

Sr.	Bridge Name	Bridge No.	Length	Width	Type	Constructed Year	Load limit (Tons)	Remark
1.	Paypin river cross bridge	1/6	720ft	24ft	R.C concrete	2012	60-T	
2.	SaluChaung Bridge	2/6	60ft	24ft	R.C concrete	2012	60-T	
3.	Wae gyi chaung Bridge	1/7	60ft	24ft	R.C concrete	2012	60-T	
4.	Padae Kyaw chaung	1/12	140ft	24ft	R.C concrete	2011	60-T	
5.	Thakkay Chaung bridge	1/13	1880ft	24ft	R.C concrete	2011	-	Under construction
6.	Phyan Yae Kyaw bridge	1/16	70ft	16ft	R.C concrete	2011	60-T	

21. (Retaining wall)

Sr.	Location	Type	Length	Width
1.	Salu Chaung bridge	Retaining wall	95ft	$\frac{4' - 5" + 1' - 5"}{2}$
2.	Wae Gyi Chaung bridge	Retaining wall	95ft	$\frac{4' - 5" + 1' - 5"}{2}$
3.	Phyan Yae Kyaw bridge	Retaining wall	50ft	$\frac{4' - 6" + 1'}{2}$
4.	Phyan Yae Kyaw bridge	Stone masonry walling	50ft	$\frac{4' + 1' - 6"}{2}$
5.	Padae Kaw bridge	Stone masonry walling	150ft	$\frac{4' + 1' - 6"}{2}$

22. Road side drain - Length Width depth Type  
Both side of Road 1.9miles 12' to 20' 6' to 8' Earth(soil)
23. Geometric Design -

