



**DEPARTMENT OF BUILDING
FACULTY OF ARCHITECTURE, PLANNING AND SURVEYING
UNIVERSITI TEKNOLOGI MARA (PERAK)
KAMPUS SERI ISKANDAR**

**PRACTICAL REPORT TITLE
ROAD MAINTENANCE AT TEBUK HAJI MUSA TO SUNGAI KOTA
PROJECT**

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AUGUST 2021 – JANUARY 2022

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be accepted in partial fulfillment of requirement has for obtaining Diploma in Building.

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STUDENT'S DECLARATION

I hereby declare that this report is my own work, except for extract and summaries for which the original references stated herein, prepared during a practical training session that I underwent at Pejabat Daerah dan Tanah Kerian for duration of 20 weeks starting from 23 August 2021 and ended on 7 January 2022. It is submitted as one of the prerequisite requirements of BGN310 and accepted as a partial fulfillment of the requirements for obtaining the Diploma in Building.

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ABSTRACT

The maintenance work of road is a very important thing for life. Road is important to connect people and because of that this report was created. This report aims for the understanding the reader about road. The purpose of this report is to explain the types of road damages, the tools and machinery for road maintenance work and also to show the process work of maintenance road running. The steps to gain that are observation and interview was done successfully to form this report. Finally, the report is clearly can explain the detail how the work of maintenance road happen.

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CHAPTER 1.0

INTRODUCTION

1.0 Background of study

Road can be define as a wide way leading from one place to another, typically one with a specially prepared surface which vehicles and bikes can use according to Wikipedia. Nowadays, Malaysia is committed in making this whole country connect with each other.

Generally, roads are use to ease everyone to move from other place to another place either using vehicle or not. Types of road are different by how it categorized. There are many ways to categorized a road such as categorized it based on its construction material or the place of the road constructed.

Construction of road is not finish as it done, it also need to be maintained to make sure it is safe to use daily. Different agency will responsible to maintain the quality of their own road. For example, Pembangunan Luar Bandar will responsible to maintain the quality of local road, which is a road that used in a village for example.

1.2 Objectives

- i. To identify types of road damages at Tebuk Haji Musa to Sungai Kota Project.
- ii. To investigate the tools and machinery used for work maintenance at Tebuk Haji Musa to Sungai Kota Project.
- iii. To explore the process of road damages maintenance at Tebuk Haji Musa to Sungai Kota Project.

1.3 Scope of study

The scope of study is focus identify types of road damages at Tebuk Haji Musa to Sungai Kota Project. Moreover, this study is to investigate the tools and machinery used for work maintenance at Tebuk Haji Musa to Sungai Kota Project and to explore the process of road damages maintenance at Tebuk Haji Musa to Sungai Kota Project.

1.4 Methods of study

There are two methods of this study were used to obtain information to complete this report. The methods are divided to two part which are primary and secondary method. Primary method is the most method used in this study. Primary method also divided to two part which are observation and interview method.

- i. Observation method

Observation method is refer to site visit activity which the work can be see clearly in live situation. Phone camera is important to record any information while the work is going on. Pictures will be useful to make it as a reference to do a work.

ii. Interview method

Interview method is a strong support to clear the vague information that get from the observation. Making the assistant engineer as a reference is a good way to understand the study detail. This method shall be note to record the information and tips given.

Secondary method is a method to support the primary method. Using written reference is a best way to get the detail information about this study. However, some of information cannot be expose to public because it is a confidential information such as the cost use to construct a road. There is only one method used in this study to obtain the information needed. This report only refer to one type of document which is the claim document. The document has some pictures of maintenance work taken by the contractor. It also has the result of the coring test which is to determine the quality of the road after finish the maintenance work.

CHAPTER 2.0

COMPANY BACKGROUND

3.1 Introduction of Company

Pejabat Daerah dan Tanah Kerian is a government agency which is responsible to administrate Kerian district from all aspect such as development and residences' welfare. It is located at No. 1 Jalan Pejabat, Kampung Permatang Tok Mamat, 34200 Parit Buntar, Perak. There are three units operate under Pejabat Daerah dan Tanah Kerian.. Firstly, Bahagian Khidmat Pengurusan (BKP) which responsible to manage all the units in Pejabat Daerah dan Tanah Kerian. Second, Pejabat Tanah, where all of the affairs about land done here. Lastly, Pembangunan Luar Bandar (PLB) responsible to manage development and welfare residences of rural places.



Figure 1.1: Front view of Pejabat Daerah dan Tanah Kerian



Figure 2.2: Location of Pejabat Daerah dan Tanah Kerian

Source: Google Map

2.2 Company Profile

Table 2.1: Company profile

INFORMATION	DESCRIPTIONS
Company's Name	Pejabat Daerah dan Tanah Kerian
District officer	Haji Mohd Sabli bin Bakri
Assistant	Cik Noraishah binti Hamdan
Type Of Company	District Government
Address	No. 1 Jalan Pejabat, Kampung Permatang Tok Mamat, 34200 Parit Buntar, Perak
Coordinate	5.1313° N, 100.4892° E
Telephone No	05-716 1963
Fax	05-716 2399
Email	Pdtkerian@perak.gov.my
Website	https://ptg.perak.gov.my/portal/web/kerian
Business Hours	0800 Hours – 1700 Hours
No Of Department & Section	3 Departments 13 Sections
List Of Department	Department: <ol style="list-style-type: none"> 1) Management Service Division 2) Land Administration Division 3) Rural Development Division
Vision	To become the best in development to achieve prosperity of folks towards 2025.

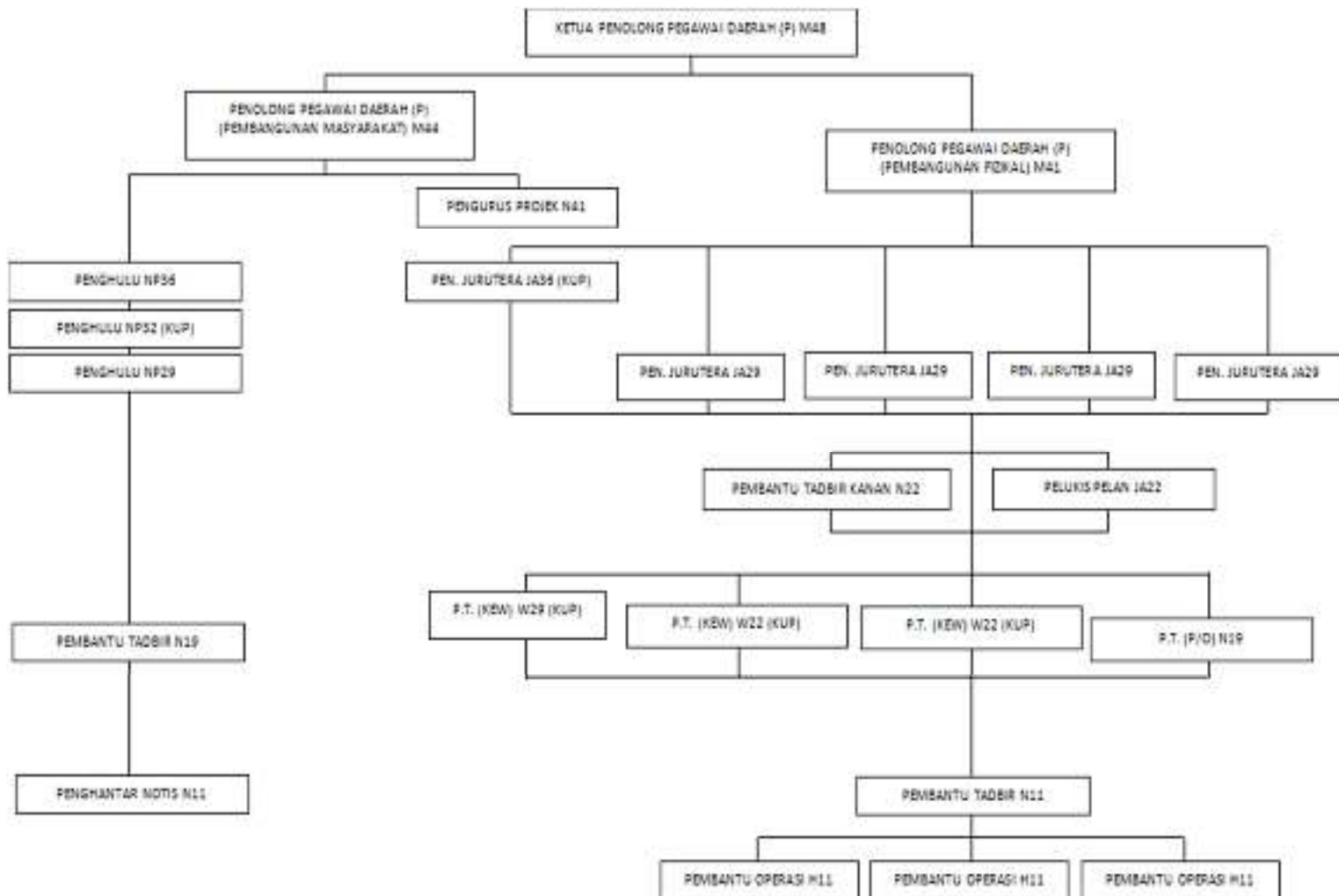
Mission	Improving the quality of the delivery system by implementing world -class management and make inspiration in district administration to ensure the well -being of the people from innovative culture.
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2.3 Company Organization Chart

Table 1.2: Pejabat Daerah dan Tanah Kerian's organization chart



Table 2.3: Pembangunan Luar Bandar's organizational chart



Pejabat Daerah dan Tanah Kerian divided by three departments and each of them have their own role and administrator. District Officer is the chairman and assisted by eight assistant district officer. Every of them responsible to run their unit while assisted by their staff. Encik Ahmad Bashir is a general administrator of Pembangunan Luar Bandar (PLB) unit. PLB divided by two sections which are physical development and society development. Physical development led by Encik Muhammad Yazid. This section assisted by five assistant engineers, a senior administrator, a planner, three financial assistants, four operation assistants and an assistant. Society development unit led by Cik Azreen Zaifizatul Alia and assisted by chief of every mukim in Kerian while assisted by notice sender which placed at every Pejabat Penghulu in this district.

2.4 List of Projects

Table 2.4 List of projects

Project Title	Value	Company Name	Status
Membaikpulih dan Menaiktaraf Rumah Hamad Bin Kasim di Alamat No. 88, Parit Haji Ismail 3, Bagan Serai	9, 000.00	Imex Enterprise	Completed
Membaikpulih dan Menaiktaraf Rumah Ismail Bin Hamsi di Alamat No.58, Parit Antara Tiga, Bagan Serai	9, 000.00	Imex Enterprise	Completed
Membaikpulih dan Menaiktaraf Rumah Norma Binti Abdul Razak di Alamat F-627, Sungai Bogak, Bagan Serai	9, 000.00	Kimpal Bina Din	Completed
Membaikpulih dan Menaiktaraf Rumah Busu bin Abdul di Alamat 169 C, Jalan Siakap	9, 000.00	Kimpal Bina Din	Completed
Membaikpulih dan Menaiktaraf Rumah Mahini Binti Awang di Alamat No. 67, JBM, Kubu Gajah, Simpang Empat	9, 000.00	Sinar Jebat Enterprise	Completed
Membaikpulih dan Menaiktaraf Rumah Mariah Binti Sabirin @ Shabudin di Alamat No. AC-9, Parit 5 Kubu Gajah, Semanggol	9, 000.00	Sinar Jebat Enterprise	Completed
Membaikpulih dan Menaiktaraf Rumah Jesni bin Shaari di Alamat No. 196, Batu 3, Jalan Bukit Merah	20, 000.00	Imex Enterprise	Completed
Membaikpulih dan Menaiktaraf Rumah Siap Bin Jeraai di Alamat 62, Parit Air itam 2, Alor Pongsu	9, 000.00	Hanny Resources	Completed

Membaikpulih dan Menaiktaraf Rumah Zaidi bin Ahmad Tarmizi di Alamat No. 138, Jalan Gula, Simpang Empat	9, 000.00	Muainajar Enterprise	Completed
Membaikpulih dan Menaiktaraf Rumah Zaiton Binti Arshad di Alamat No. 5, Parit Haji Amin	9, 000.00	Lihim Enterprise	Completed
Membaikpulih dan Menaiktaraf Rumah Marhanang Bin Tahir di Alamat 114, jalan Banjar, Masjid Tinggi	9, 000.00	Lihim Enterprise	Completed
Membaikpulih dan Menaiktaraf Rumah Siti Fatimah Napiah di Alamat No. 24, Batu 4 1/2 Jalan Bukit Merah, Bagan Serai	9, 000.00	Perniagaan Murni	Completed
Membaikpulih dan Menaiktaraf Rumah Ijab binti Mohamed di Alamat B28 Parit Lima, Sungai Protan, Selinsing	9, 000.00	Imex Enterprise	Completed
Menaiktaraf Jeti Kuala Sungai Betul	50, 000.00	Imex Enterprise	Completed
Menaiktaraf Jeti Kuala Bagan Tiang	50, 000.00	Perniagaan Omigaye	Completed
Membaikpulih Rumah Marian Binti Mohamed Nusi di Alamat No. 73, Simpang Tiga Selinsing, Simpang Empat	9, 000.00	Hanny Resources	Completed
Membaikpulih Rumah Abdullah bin Mat Noh di Alamat No. 75, Kampung Tersusun Pondok Tanjung	9, 000.00	Amanda Maju Enterprise	Completed

CHAPTER 3.0

THE MAINTENANCE OF ROAD WORK

3.1 Introduction to Case Study

This study is focus on the work of maintenance and to maintain the quality of the local road. This road is located at Tebuk Haji Musa heading to Sungai Kota, Bagan Tiang, Perak. There is a written complaint has been delivered to district officer through Pejabat Daerah dan Tanah Kerian. Then, this complaint delivered to agency Pembangunan Luar Bandar to take an action. The road has not been repaired for a year before. After assistant engineer do an investigation about the road, they found out there are a lot of damage happen to the road due to heavy machinery using the road for enter the paddy field near the location.

Agency Pembangunan Luar Bandar start the action with opening a tender to registered contractor company to choose the best offer using quotation document. The company have been chosen by a meeting based on the quotation document. After get the majority agreement, the company will be offer the work by a written letter complete with the duration the work shall be done. The maintenance work will start after the company get the permit to do the job. The maintenance work must be done based on the quotation document.

3.2 Types of road damage

i. Cracking

Cracking happen because of failure the premix surface. There are some factors which cause this happen, firstly because of the road receive too much load which is from heavy transport or machinery. Then, it also can affect by the change of temperature in the premix.



Figure 3.1: road cracking

iii. Depression

Depression is a state when a road become different level which one side is lower than other side. It is normally happen on the tire track.



Figure 3.2: Depression of road

iv. Pothole

Pothole is a forming hole which can grow if not fixed as soon as possible. This damage happens because of the load of vehicles cracks the road and lets rain drop in it and cause disintegration process happen.



Figure 3.3: The pothole

iv. Ravelling

This is affect because of too much dust contain in the premix which cause the bitumen bind the dust more than the premix. This imperfection construct cause the aggregate easily gouge out from the road surface.



Figure 3.4: Road ravelling

3.3 The machinery and tool used for maintenance of road

i. Paver

A paver is a famous machinery in road construction work. It is use to lay asphalt on roads, bridges, parking lots and other such places. It lays the asphalt flat and provides minor compaction.



Figure 3.5: A paver

ii. Roller

Rollers are a type of construction plant used for compacting materials such as soil, gravel, sand, road surfaces and so on. The material can be compacted by vibration, impact loading, kneading, and direct pressure.



Figure 3.6: A roller

v. Backhoe

Backhoe's function is to levelling the crusher run before the crusher run be compact by roller.



Figure 3.7: A backhoe

3.4 The maintenance work of road

First step, the contractor ride a motorcycle along the road while marking any damage found using a spray paint. The road was closed to prevent from public enter the working area. Set up the position all of the machinery and lorries because village roads are small and narrow, without perfect planning it will difficult the job. A backhoe come first to clean the road include cleaning the side road from grass. Then, lorries will come and pour crusher run on the road from the starting point that have been marked until the end of the marked road. The backhoe start levelling the crusher run more than 75mm thick because the thick of the crusher run will decrease after compacted by roller. The crusher run have been compacted after that using a 6 ton roller. Spraying 4 liter/meter square bitumen to all of the crusher run and 1.4 liter/meter square on the surface to act as a binder between the crusher run and the premix. Paver pouring the premix asphaltic concrete wearing course (ACWC) 50mm thick on the road after has been filled by a lorry. The premix compacted by 6 ton roller after that. Then, this project done and waiting for coring test to determine is it pass the qualification or not.



Figure 3.8: Road damages



Figure 3.9: A backhoe cleaning the side road from grass



Figure 3.10: A roller compact the premix



Figure 3.11: A lorry pour the crusher run on road



Figure 3.12: Worker spraying bitumen



Figure 3.13: A lorry fill the paver with premix



Figure 3.14: The coring reading

CHAPTER 4.0

CONCLUSION

The conclusion of this report is about types of road damages at Tebuk Haji Musa to Sungai Kota Project, investigate the tools and machinery used for work maintenance and explore the process of road damages maintenance at Tebuk Haji Musa to Sungai Kota Project. Damage of road is something that cannot be avoid because it is not affected by the construction only but it is also affected by the changing of weather. Therefore, road maintenance is a mandatory thing to do to maintain the quality and the safety of the road uses. There are difference of road thickness according to what types of the road construct.

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