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1.INTRODUCTION

Road is the pathway or route designed for vehicles, pedestrians, or animals to travel from one location to another. Roads are divided into two types which are paved roads and unpaved roads.

Paved roads are type of roadway with a durable, smooth surface designed for efficiency and safe transportation. It is constructed using materials such as asphalt, concrete, or stone.

Unpaved roads is the type of roadway without a hard, durable surface. It is typically made of natural materials such as dirt, gravel or sand and is commonly found in rural or less developed areas.

On 14th November, 2024. We went at old airport for study tour which was organized by civil engineering department to provide students to gain knowledge on road construction processes and techniques. The tour aimed to bridge the gap between theoretical knowledge and on-site practice. The specific focus was to get knowledge on the stages of road construction and machine use.

The constructed road was about 1.5 km and that project was named ‘UPGRADING OF THREE CONNECTING ROADS TO INDUSTRIAL PARK AT OLD AIRPORT TO BITUMEN STANDARD IN MBEYA CITY COUNCIL IN MBEYA REGION. The project cost

3.523450 billion that will take duration of 12 months. We went at the study tour under assistance of lecture and the some of engineers that involves in construction of that road.

2.BACKGROUND INFORMATION

The road was unpaved road

3.OBSERVATION AND LEARNING OUTCOMES

Key activities observed at the site

-installation of drainage system [they were measuring depth and height of side drains]

-Allocation of curvets

Learning outcomes/ in sight gained

Layers of the road

The first layer was G3 is about 15 cm, its other name of this layer is roadbed. Most of materials used in this layer are gravel and crushed stones.

The second layer was G7 which contained two[2] layers which are G7 one and G7 two which each layer contained 15 cm each. Materials found in this layer are natural gravel, decomposed rocks, sand and soft aggregate.

The third layer is C1, the other name of this is ***stabilized layer*** where this layer has a thickness of 20cm. Materials used in this layer are not to be found easily, hence obtained through a combination of cement or limestone according to the laboratory test design so as to obtained the desired C1 quality.

The final layer is the bituminous layer[asphalt layer]. The first activity in this layer is **priming** which involves the spilling of lighter bitumen to seal the road from moisture retaining and preventing water from entering down layers, lastly spilling lighter bitumen[MC 30] is contain 30% of bitumen and the remained percentage is kerosene or paraffin. This layer is called **finishing layer** where the layer has a thickness of 5cm.

ROAD DRAINAGE SYSTEMS.

Road drainage systems are the systems that manage water on or around the roadway to ensure safety, durability and proper functionality of the road. The main purpose of road drainage systems is to ensure that the road is free from water(no contact between water and the road as water weakens the road). Drainage systems are categorized into **surface drainage, sub surface drainage and cross drainage systems.**

Surface drainage are the road drainage systems which manages water flowing on the road surface and adjacent areas. Their main purpose is to prevent water accumulation on the road and hence reduce road slipperiness and flooding. Examples of surface drainage systems side drains, catch basins and gutters and kerbs.

Sub surface drains are the road drainage systems which addresses water within the soil beneath or around the road. Their main purpose is to prevent the weakening of the subgrade due to water infiltration. Examples of subsurface road drainage systems may include under drains, perforated pipes and aggregate layers under pavements.

Cross drainage are the road drainage systems which allows natural watercourses to cross roads without obstruction. The main purpose of this system is to maintain the natural flow of water across the road alignment. Examples of these systems include culverts bridges and causeways.

The drainage system employed on the road we had a study tour on were culverts and sideways. Culvert is a structure that allows water to flow under the road. The culvert placed on the road was a box culvert. The picture below is an illustration of where the box culvert is being placed.

4.CONCLUSION