INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous)

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1. Student Details

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Date: 22-04-2022

CERTIFICATE

This is to Certify that Mr./Ms. S. Saipranith studying Second Year B.Tech. Civil - Engineering ..... in Institute of Aeronautical Engineering, Hyderabad has undergone Industrial In-Plant Training (IIT) in our organization from 16-04-22. to 22-04-2022

SIGNATURE WITH SEAL
Asst. Executive Engineer
(R&B) Section: Peddapally.

3.Title of the field practicum.

CONSTRUCTION OF CEMENT CONCRETE ROAD, NANDI MEDARAM ROAD AND BUILDING DEPARTMENT, PEDDAPALLI,505172.

4.Purpose of the field project

- To know the construction of the roads
- Roads are important assets for any nation
- Each type of pavement has its own merits and demerits.

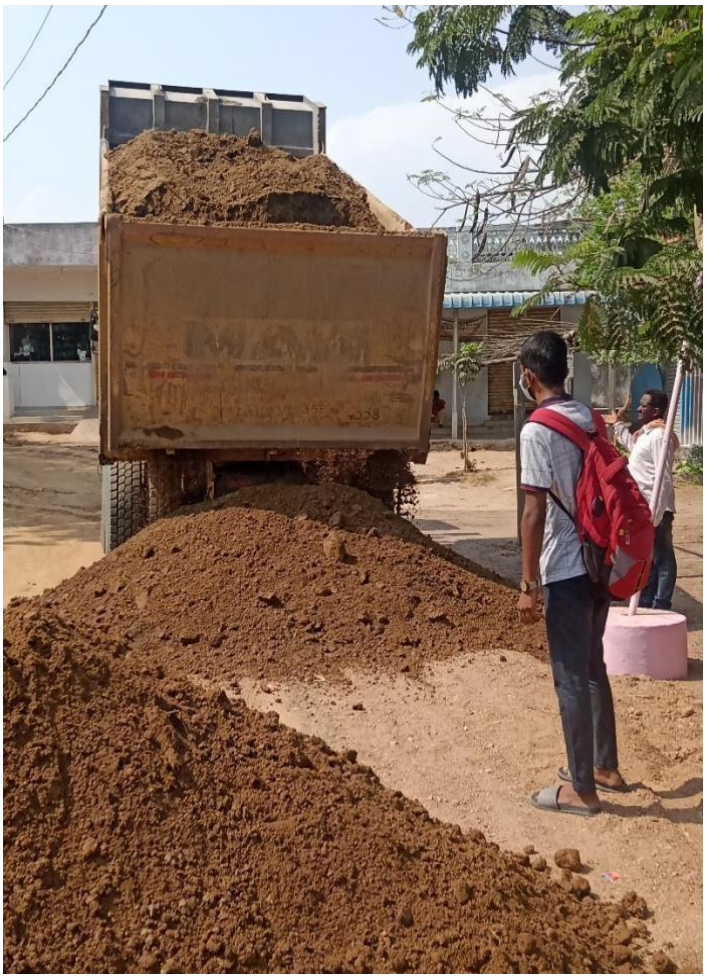

Fig 1 : unloading the gravel

5.Objectives:

- Roads are the major channel of transportation for carrying goods and passengers. They play a significant role in improving the socioeconomic standards of a region.

- Roads constitute the most important mode of communication in areas where railways have not developed much and form the basic infra-structure for the development and economic growth of the country.

- Roads are important assets for any nation. However, merely creating these assets is not enough, it has to be planned carefully and a pavement which is not designed properly deteriorates fast.

- There are various type of pavements which differ in their suitability in different environments. Each type of pavement has its own merits and demerits. Despite a large number of seminars and conference, still in India, 98% roads are having flexible pavements.

- A lot of research has been made on use of Waste materials but the role of these materials is still limited. So there is need to take a holistic approach and mark the areas where these are most suitable.

- India has one of the largest road networks in the world (over 3 million km at present)

.**For the purpose of management and administration, roads in India are divided into the following four categories:**

1. National Highways (NH)

2. State Highways (SH)

3. Major District Roads (MDR)

4. Other District Roads (ODR)

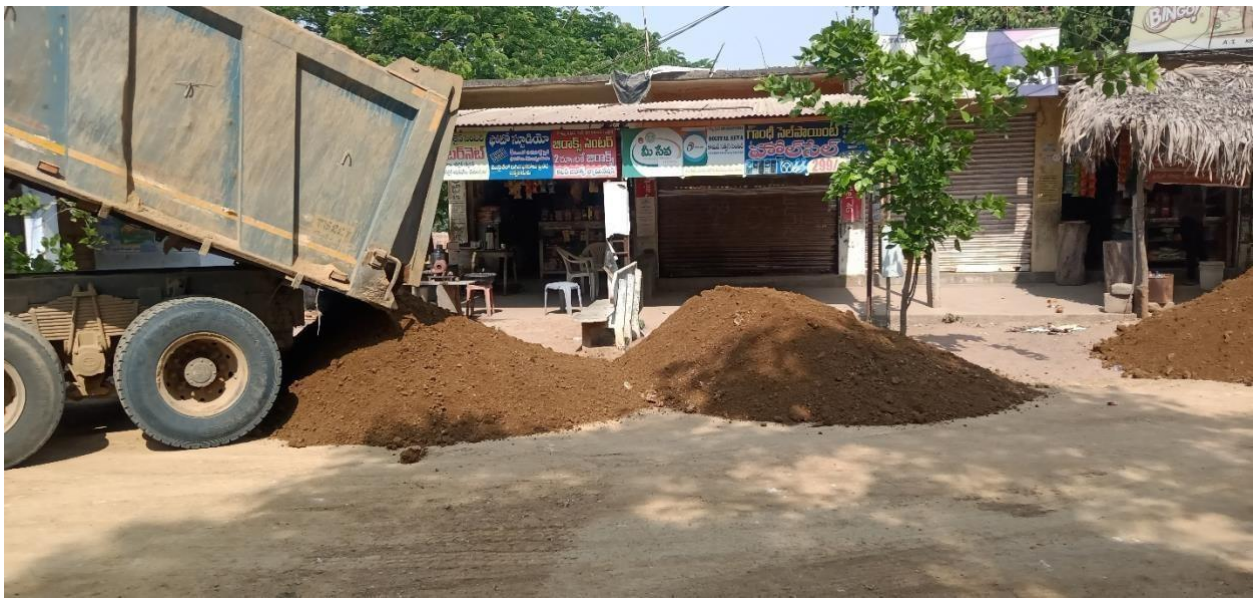

Fig 2 : unloading the gravel and Robo sand

6.Description

- Pavement or Road is an open, generally public way for the passage of vehicles, people, and animals. Pavement is finished with a hard smooth surface. It helped make them durable and able to withstand traffic and the environment. They have a life span of between 20 – 30 years. 6 Road pavements deteriorate over time

- Pavement material and geometric design can affect quick and efficient drainage. These eliminating moisture problems such as mud and pounding (puddles). Drainage system consists of: Surface drainage: Removing all water present on the pavement surface, sloping, chambers, and kerbs.Subsurface drainage: Removing water that seep into or is contained in the underlying sub-grade.

• Environmental factors such as weather, pollution. PURPOSE Many people rely on paved roads to move themselves and their products rapidly

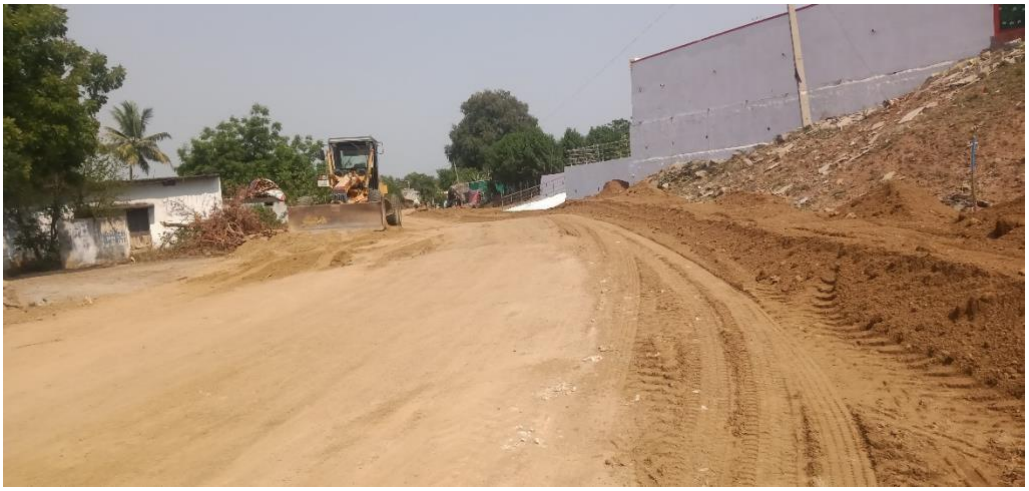

Fig 3 spreading of gravel

Fig 4: 40mm blended subbase

TYPES OF PAVEMENTS

- **FLEXIBLE PAVEMENTS**

Bitumen has been widely used in the construction of flexible pavements for a long time. This is the most convenient and simple type of construction. The cost of construction of single lane bituminous pavement varies from 20 to 30 lakhs per km in plain areas

- **RIGID PAVEMENTS**

Rigid pavements, though costly in initial investment, are cheap in long run because of low maintenance costs.

7.INTRODUCTION:

- **Components parts of road structure**

1.Sub Grade:

It is the top of the ground on which the foundation rests. If the subgrade selected is at higher level leads to natural drainage.

Function:

1. To support the road structure.
2. To distribute the load over larger area.
3. To form a bed for the road at the designed level.

2.Sub Base:

It is the layer of locally available material laid over the subgrade. Material used may be sand, gravel, rubble, stabilized soil etc.,

Function:

1. To protect the subgrade from rain.
2. To improve the drainage.
3. To reduce the cost of the pavement.

3.Base Course:

It is the layer between subbase and wearing course. It is made of good material like Hard Broken Granite metal and well compacted. It is important structural component and should be strong enough to bear the road traffic load. **Functions**

1.To transfer the load from wearing course to sub base.

2.To support the wearing course and avoid distortions on it.

3.To reduce the thickness of wearing course.

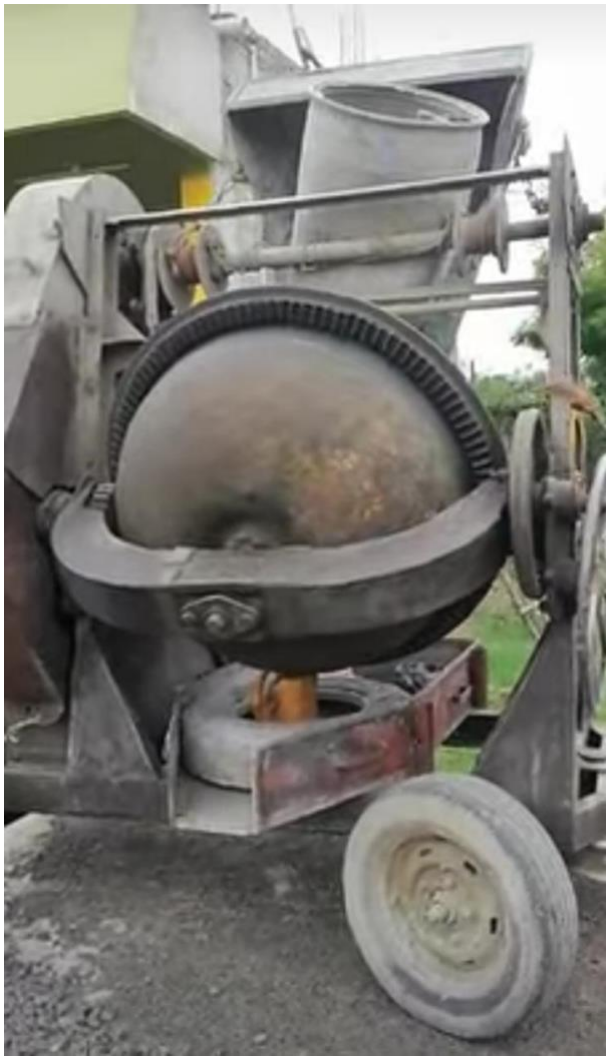

Fig 5 : cement mixer

4.Wearing Course:

This is the top most layer of the road which is in direct contact with the road traffic. It should be strong enough to take care of wearing effects of road traffic and impervious. If the water penetrates into wearing course life of road gets reduced.

Functions:

1. To provide smooth and stable road surface for road traffic.

2. To drain away the rain water.

3. To give strength to the road structure.

- **Fillings of Joints and Edging :**
  - After curing, the surface is cleaned and washed.
  - The joints are then properly filled-in attains with a suitable sealing compound.

- **Opening to Traffic :**

Concrete road is opened to traffic when it attains the required strength or after 28 days of curing

8.CONCLUSION:

- Indias economical growth plan of over 6% per annum for the next 20 years will, to a great extent, depend on an efficient road infrastructure, not only national highways but other roads too, including link roads for rural connectivity, which can provide fast movement of goods and people with safety and economical cost to the user.
- government of India has drawn up PradhanaMantri gram Sarak Yojana(PMGSY) for implementation of rural connectivity. it is estimated that in the next 7 years, road works under PMGSY worth Rs. 1,20,000 crores are to be constructed .
- Since road pavements are an important part of these projects, costing about 50% of the investment , a careful evaluation of the alternatives is necessary to make the right choice on a rational basis, which may be comparatively more beneficial to the nation.

Signature of the student **Signature of mentor**

Signature of HOD with seal