



HIGHWAY ENGINEERING

Micro project



INSTITUTE OF CIVIL AND RURAL ENGINEERING

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MICRO -
REPORT



A
PROJECT
ON

OVERVIEW TO HIGHWAY ENGINEERING

COURSE NAME –HIGHWAY ENGINEERING (22302)
CLASS-CR-3-I, SEMESTER-III
FOR YEAR -2021-2022, WINTER-2022,
DIPLOMA IN CIVIL AND RURAL ENGINEERING, GARGOTI

UNDER THE
GUIDANCE OF
SUBJECT

SHRI MOUNI VIDYAPITH'S
CIVIL AND RURAL ENGINEERING DEPARTMENT, ICRE GARGOTI

FOR THE YEAR-2021-22

CERTIFICATE

THIS IS TO CERTIFY THAT FOLLOWING STUDENTS, BATCH- C

OF BATCH A/B/C OF SYCR CIVIL AND RURAL ENGINEERING HAVE COMPLETED THE
GROUP MICROPROJECT WORK ON

UNDER THE GUIDANCE OF SUBJECT TEACHER

More Sir OF

SHRI MOUNI VIDYAPITH'S
CIVIL AND RURAL ENGINEERING DEPARTMENT, ICRE GARGOTI
FOR THE YEAR-2021-22

SHRI MOUNI VIDYAPITH'S

DIPLOMA IN CIVIL AND RURAL ENGINEERING (2021-2022).



ICRE.GARGOTI

**MAHARASHTRA STATE
BOARD OF TECHNICAL EDUCATION**

Certificate

This is to be certified that Mr. / Ms.

*Roll No.:..... Of Third semester of Diploma in Civil and Rural Engineering of institute, INSTITUTE OF CIVIL AND RURAL ENGINERRING GARGOTI, (code- 0012) has completed the MICRO PROJECT work satisfactory in course **OVERVIEW TO HIGHWAY ENGINEERING** (22302),of class **CR-2-III**, for the academic year-2021-2022 (WINTER-2022) as prescribed in the curriculum.*

Place:- Gargoti.

Enrollment No :-

Date:-

Exam seat No :-

MICRO-PROJECT TITLE

OVERVIEW TO HIGHWAY ENGINEERING

Subject Teacher

Head of Department

Principal

PROF. ARUN .R.BHOSALE

PROF. JAYANT S. GHEVADE



IMPORTANCE OF ROADS IN INDIA

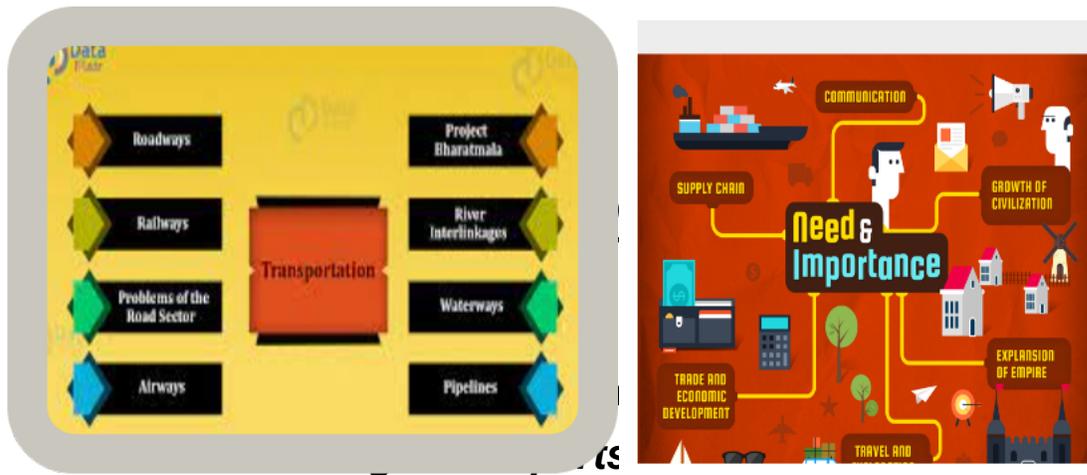
- ***☛ Roads are an integral parts of transportation system. A good network of roads in country helps to maximize***

 - ☛ Economic and social benefits Road transport help in interconnecting all business to all major markets, driving trade, creating employment throughout county.***

 - > Road helps in connecting rural areas of India to form national market and thus helps in economical development of country***

 - > The efficiency of the innumerable government programmes aimed at rural development, employment generation and local industrialization is to large extent, determined by connectivity provided by roads.***

 - > Thus road transport helps for sustainable progress of India.***
-



- > ***It require relatively less investment by the government. Construction and maintenance of road transport is cheaper. It is the only means of transport which offers to the whole community alike.***
- > ***Road transport is such transport which can be used by all types of vehicles such as motor cycles, bicycles, buses, scooters, moped, rickshaws, animal driven carts, tourist buses, trucks, mobile cranes etc.***



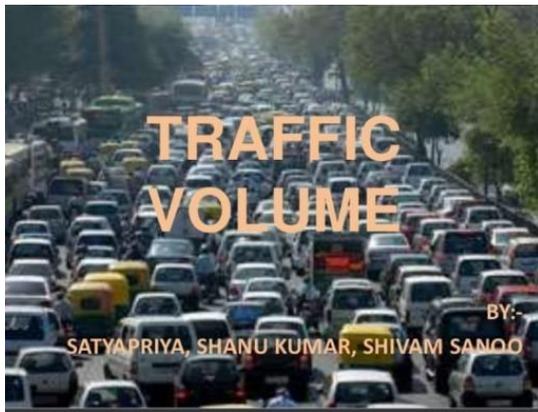
- **General classification of roads**

- ***The roads are classified based on***
 - 1. Traffic volume***
 - 2. Traffic tonnage***
 - 3. Location and function***
 - 4. Width***
 - 5. Economy***
 - 6. Traffic type***
 - 7. Rigidity***
 - 8. Topography***
 - 9. Material***

1. TRAFFIC VOLUME

- **Very heavy traffic roads** When vehicles per day on road is above 600.
- **Heavy traffic roads** - When vehicles per day on road is between 251 to 600.
- **Medium traffic roads** - When vehicles per day on roads is between 70 to 250.
- **Light traffic roads** – When vehicles per day on roads is below 70.





vehicles per day on

- ***roads are above 1524***
 - ***Heavy traffic roads When vehicles per day on roads is between 1017 to 1524***
 - ***3. Medium traffic roads When vehicles per day on roads is between 508 to 1017.***
 - ***Light traffic roads - When vehicles per day on roads is below 508.***
-

3. Location and function

- **National Highway (NH).**
- **State Highway (SH)**
- **Major District Roads (MDR)**
- **Other District Roads (ODR)**
- **Village Roads**

(VR) 4.WIDTH

Standard Double Lane: Surfaced roads having clear carriageway width between 7.0 and below 10.5 M. Standard Multi Lane: Surfaced roads having clear carriageway width of 10.5M.



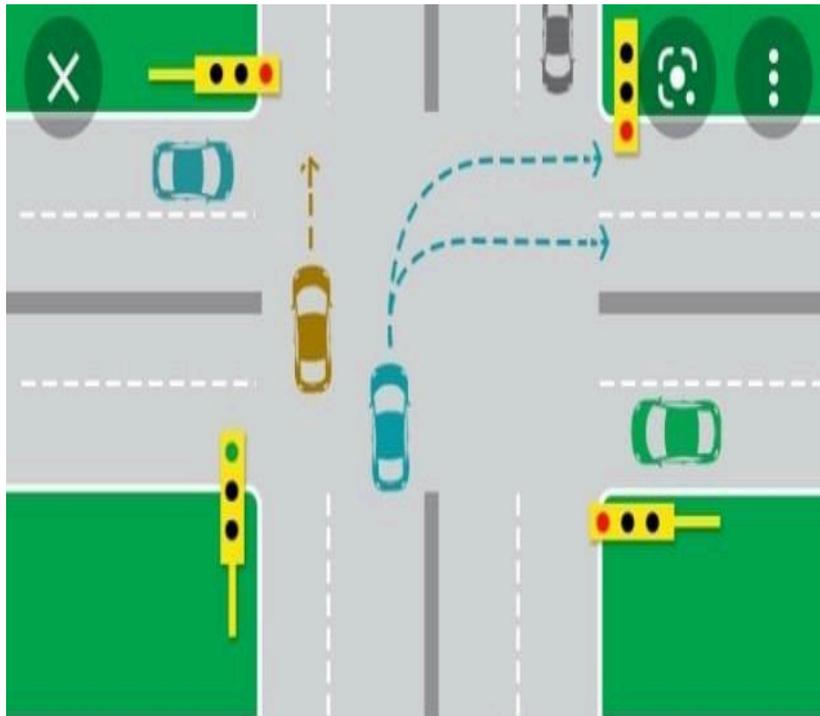
5. ECONOMY

An economy is the large set of inter-related production, consumption, and exchange activities that aid in determining how scarce resources are allocated. The production, consumption, and distribution of goods and services are used to fulfill the needs of those living and operating within the economy, which is also referred to as an economic system.



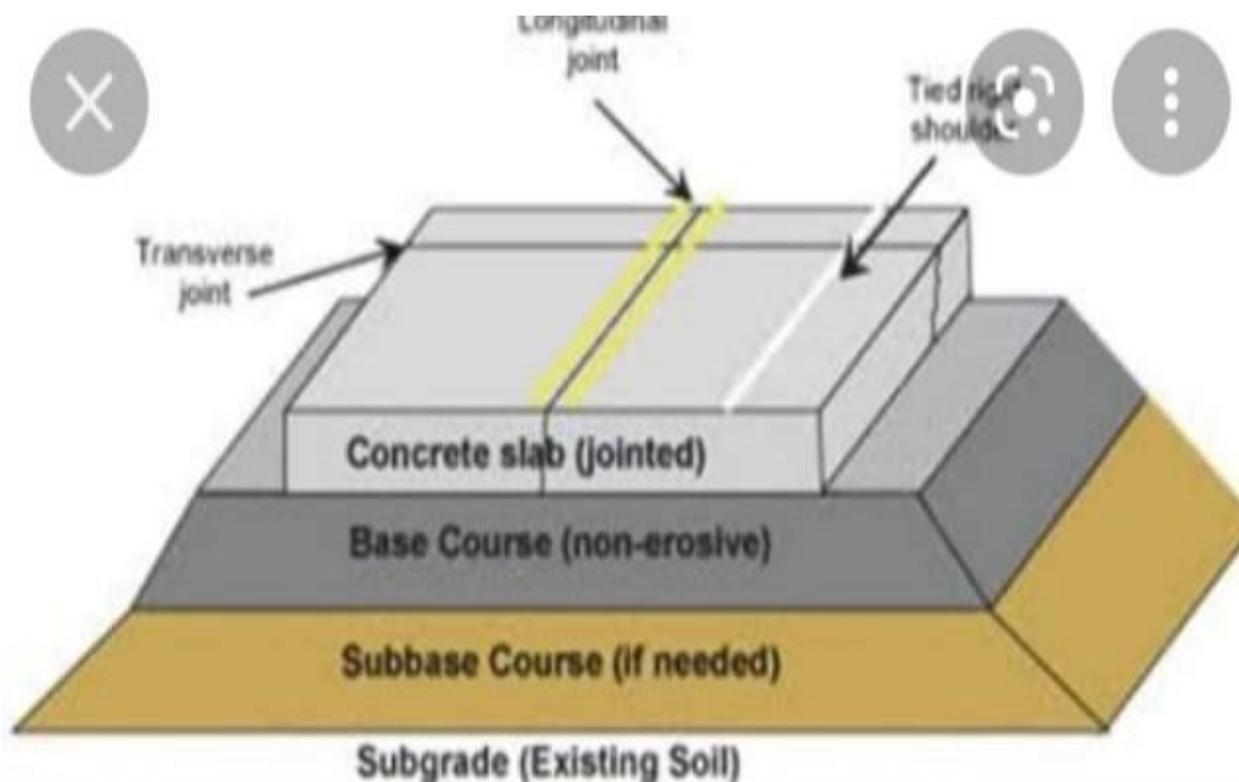
6. TRAFFIC TYPE

There are different types of traffic: Direct, Organic, Referral, Social, Email, Display and Paid. These describe exactly how that traffic arrived at your site. Where Can I Find This Metric: There isn't one place where Traffic is written out, but all of the terms below impact total traffic.



7. RIGIDITY

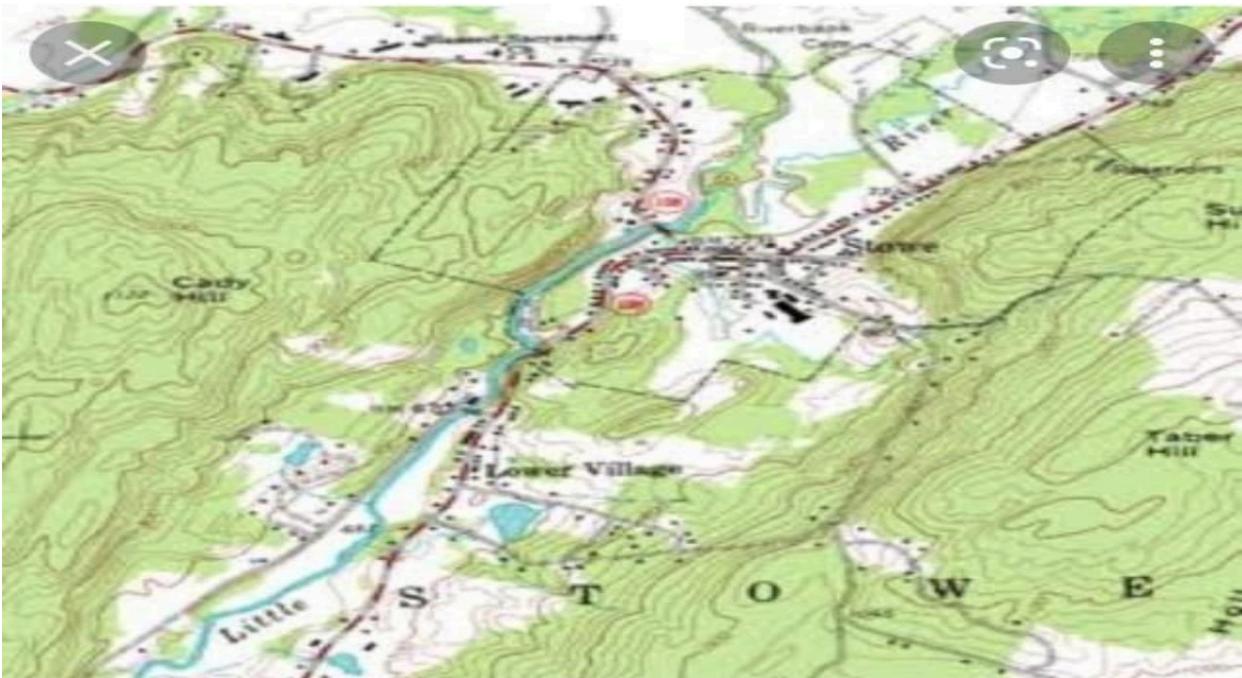
These are the roads with only three layers (Surface course, Base and Subgrade course) makes road non-flexible. Cement concrete road falls under this category. ... All types of roads except concrete roads fall under this category.



8. TOPOGRAPHY

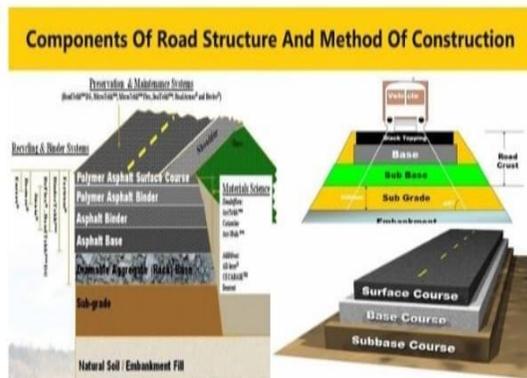
Topography is the study of the forms and features of land surfaces. ...

Topography in a narrow sense involves the recording of relief or terrain, the three-dimensional quality of the surface, and the identification of specific landforms; this is also known as geomorphometry.

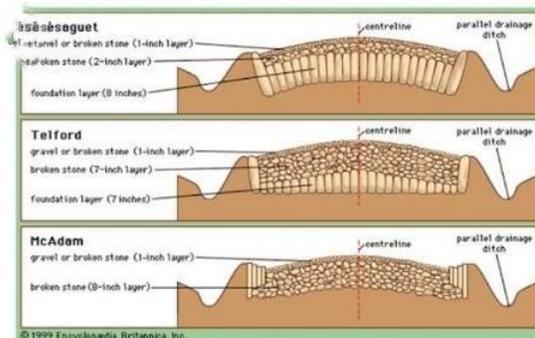


9. MATERIAL

Material is a substance or mixture of substances that constitutes an object. Materials can be pure or impure, living or non-living matter. Materials can be classified based on their physical and chemical properties, or on their geological origin or biological function.



● ROAD IN EMBANKMENT

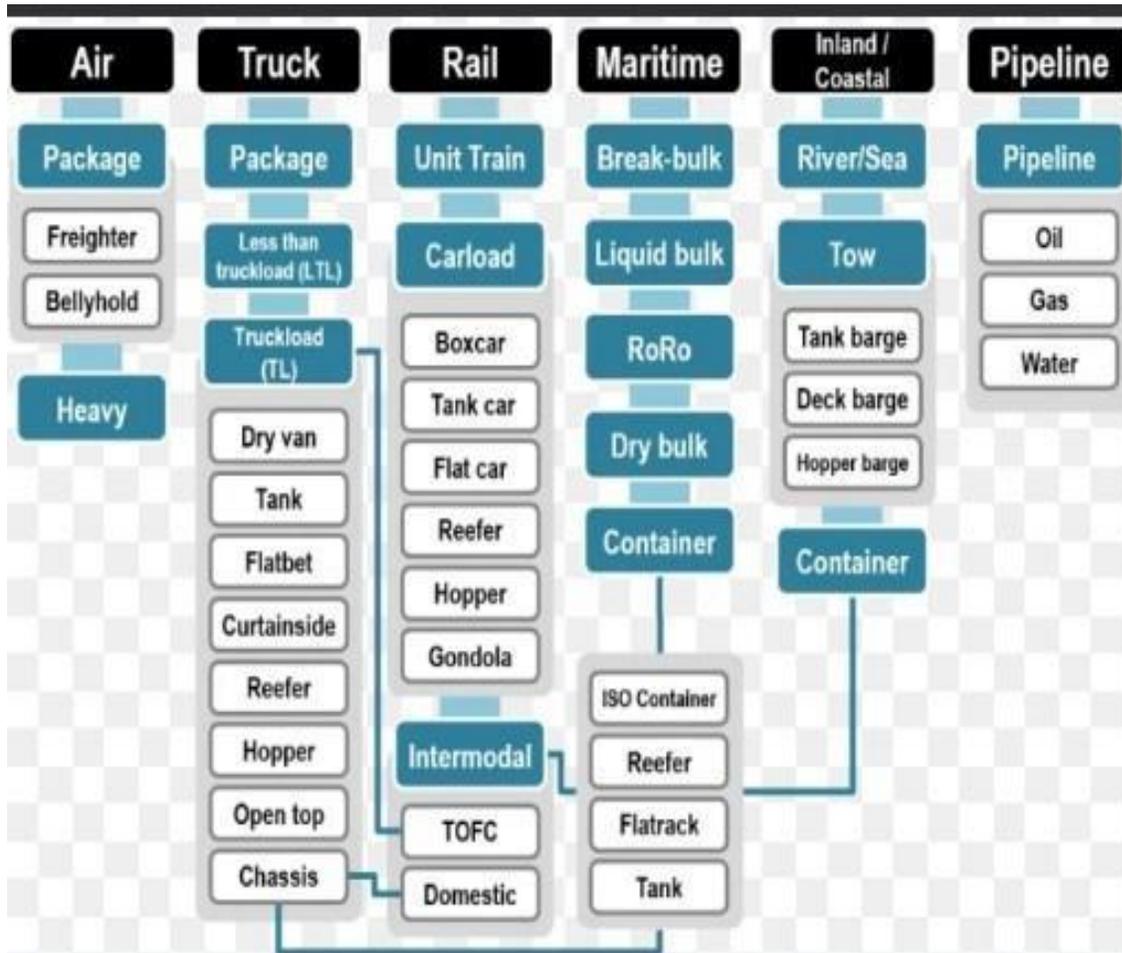


Engineers such as Pierre Tresaguet (France) designed roads that drained better and survived the elements. This led to an easier, faster, and cheaper travel of goods.

- **ROADWAY**

Road transport is the only means of transport that offers itself to the whole community alike, for development of country, well planned network of roads connecting length and breadth of country is must.

- **DIFFERENT MODES OF TRANSPORTATION**



- **RAILWAY TRANSPORT**

Railway Engineering is branch of civil engineering which deals with the design, construction and maintenance of all types of rail transport systems The track on a railway or railroad is known as permanent way is a structure which consists of

1.Rails

2. Sleepers

3.Ballast4.

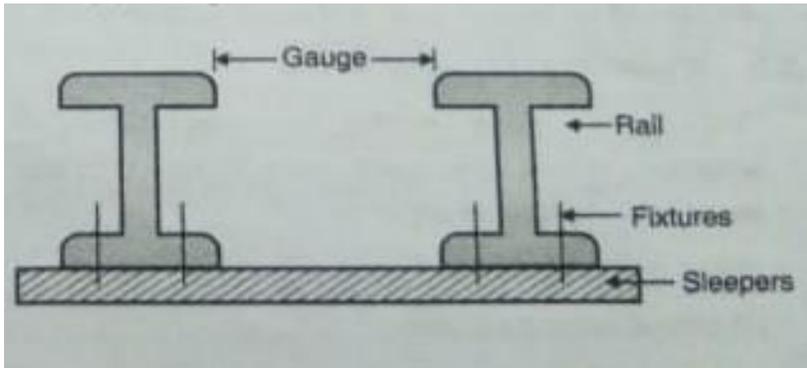
4.Sub grade.

Permanent way provides structure for their wheels to roll upon. Railroads is divided into three segments

1.light rail

2.Rapid transit

3. Freight train



The rails run parallel to each other and maintain constant distance between them throughout . A distance between inner faces of rails is known as 'Gauge of track'.



● **TABLE NHDP PHASE TABLE**

SR.NO	NHDP PHASE	LENGTH KM	DATE OF COMPLETION
1.	Phase I	5846km	December2006
2.	Phase II	7300km	December2009
3.	Phase IIIA	4000km	December2009
4.	Phase IIIB	6000km	December2012
5.	Phase IVB	5000km	December2012
6.	Phase IVB	5000km	December2013
7.	Phase V	6500km	December2012
8.	Phase VIA	400km	December2014
9.	Phase VIB	500km	December2015
10.	Phase VII	700km	December2012

