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# INTRODUCTION TO HIGHWAY ENGINEERING

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# HIGHWAY ENGINEERING

- THE BRANCH OF ENGINEERING WHICH DEALS WITH ART OF DESIGN, CONSTRUCTION AND MAINTENANCE OF ROADS IS CALLED HIGHWAY ENGINEERING

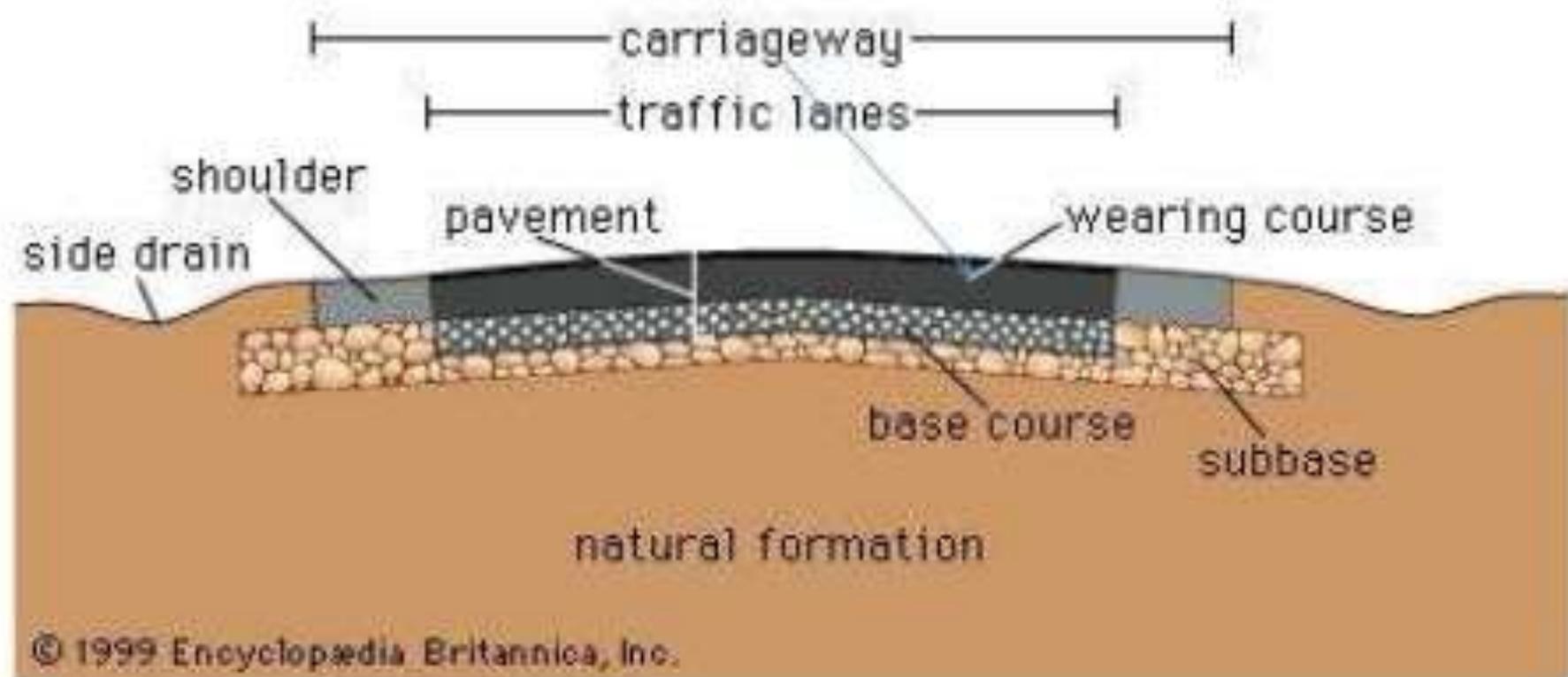
# IMPORTANCE OF HIGHWAYS

- CONVENIENT MOVEMENT OF TRAFFIC
- ECONOMIC PROSPERITY AND GENERAL DEVELOPMENT OF A COUNTRY
- PROVIDES EMPLOYMENT DIRECTLY AND INDIRECTLY
- ROADS ARE FEEDER LINES FOR OTHER MODES OF TRANSPORTATION
- ALLOW TOURIST INFLOW IN COUNTRY
- HELPFUL IN MOBILISING MEDICAL AIDS AND OTHER EMERGENCY SERVICES

# SOME IMPORTANT HIGHWAY TERMS

- ROAD
- TRAFFIC
- RIGHT OF WAY
- STREET
- CARRIAGE WAY
- CYCLE TRACK
- FOOTPATH
- EXPRESSWAY
- FAIR WEATHER ROADS
- ALL WEATHER ROADS
- RIBBON DEVELOPMENT
- ROADSIDE ARBORICULTURE

# Highway Cross section Element



# IMPORTANT ORGANISATIONS PROMOTING ROAD DEVELOPMENT IN INDIA

- INDIAN ROAD CONGRESS{1934}
- CENTRAL ROAD RESEARCH INSTITUTE{1950}
- MINISTRY OF ROAD TRANSPORT AND HIGHWAY
- NHAI{1989}

# IRC CLASSIFICATION OF ROADS

- NATIONAL HIGHWAY
- STATE HIGHWAY
- MAJOR DISTRICT ROADS
- OTHER DISTRICT ROADS
- VILLAGE ROADS

# CURVES

- HORIZONTAL-[CIRCULAR AND TRANSITION]
- VERTICAL-[SUMMIT AND VALLEY]

# SUPERELEVATION

- THE TRANSVERSE INCLINATION PROVIDED TO THE PAVEMENT SURFACE ON CURVES BY RAISING THE OUTER EDGE WITH RESPECT TO INNER EDGE TO COUNTERACT CENTRIFUGAL FORCE AND TO REDUCE TENDENCY OF VEHICLE TO OVERTURN IS CALLED SUPER ELEVATION
- ALSO CALLED CANTING OR BANKING

# ROAD SURVEYS

- RECONNAISSANCE SURVEY [RECCI]
- PRELIMINARY SURVEY
- LOCATION SURVEY

# ROAD PAVEMENTS

- FLEXIBLE PAVEMENTS – WHICH CAN RESIST TENSILE STRESSES BUT HAVE LOW FLEXURAL STRENGTH AND VERY LITTLE RESISTANCE TO DEFORMATION UNDER WHEEL LOADS. **ALSO CALLED BLACK TOP ROADS.**
- RIGID PAVEMENTS- HIGH FLEXURAL STRENGTH AND HIGH RESISTANCE TO DEFORMATION UNDER WHEEL LOADS.
- SEMI-RIGID PAVEMENTS- PROPERTIES IN BETWEEN RIGID AND FLEXIBLE PAVEMENTS. EXAMPLE- POZZOLANIC CONCRETE PAVEMENTS.

# MAJOR ROAD MATERIALS IN FLEXIBLE PAVEMENTS

- BITUMEN
- TAR
- ASPHALT



