

Quiz: Design, Construction, and Maintenance



When to we want to compact our aggregate surfaces?

- A. During Blading
- B. During layout and shaping
- C. When the moisture is correct
- D. Anytime we can

Discuss

Unpaved Roadway Crown

Proper Roadway Crown on a straight, level section should be:

- A) 0%
- B) 2%
- C) 4%
- D) 7%

Unpaved Roadway Crown

Why is such a slope necessary? Asphalt drains great at X% normal Crown, as does Concrete!

Unpaved Roadway Ditches

Without profile grade, how deep should our drainage ditches be, and why?

How do we grade or maintain Railroad crossings?

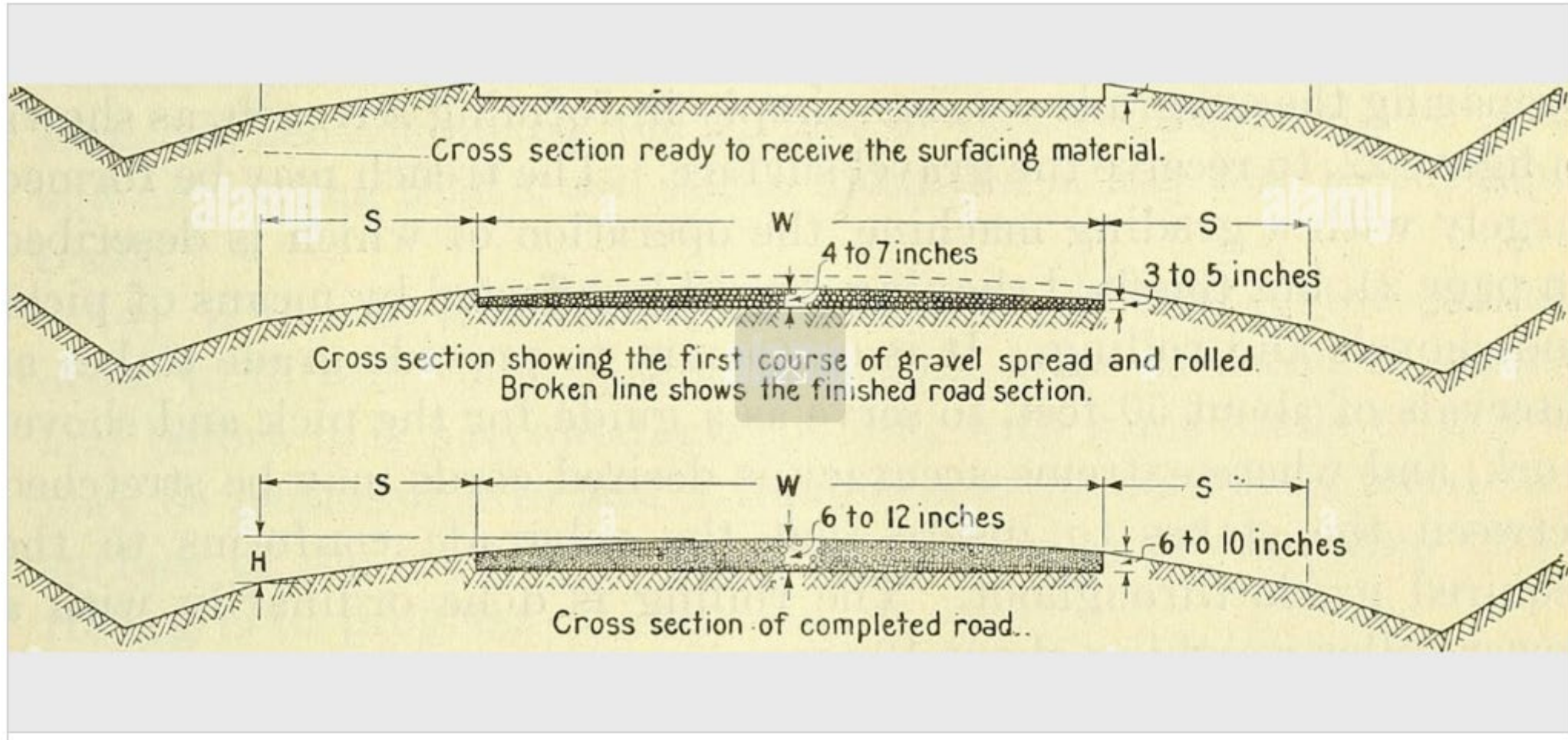
Discuss



What contributes to roadway corrugation?

- A) Poor quality gravel surfacing
- B) Traffic characteristics (speed, etc)
- C) Weather
- D) Inadequate Crown
- E) All of the above

Roadway Cross Section



What CAUSES roadway corrugation?

- A) Poor quality gravel surfacing
- B) Traffic characteristics (speed, etc.)
- C) Weather
- D) Inadequate Crown
- E) All of the above

What
shape are
we trying
to achieve?



A)



B)



C)

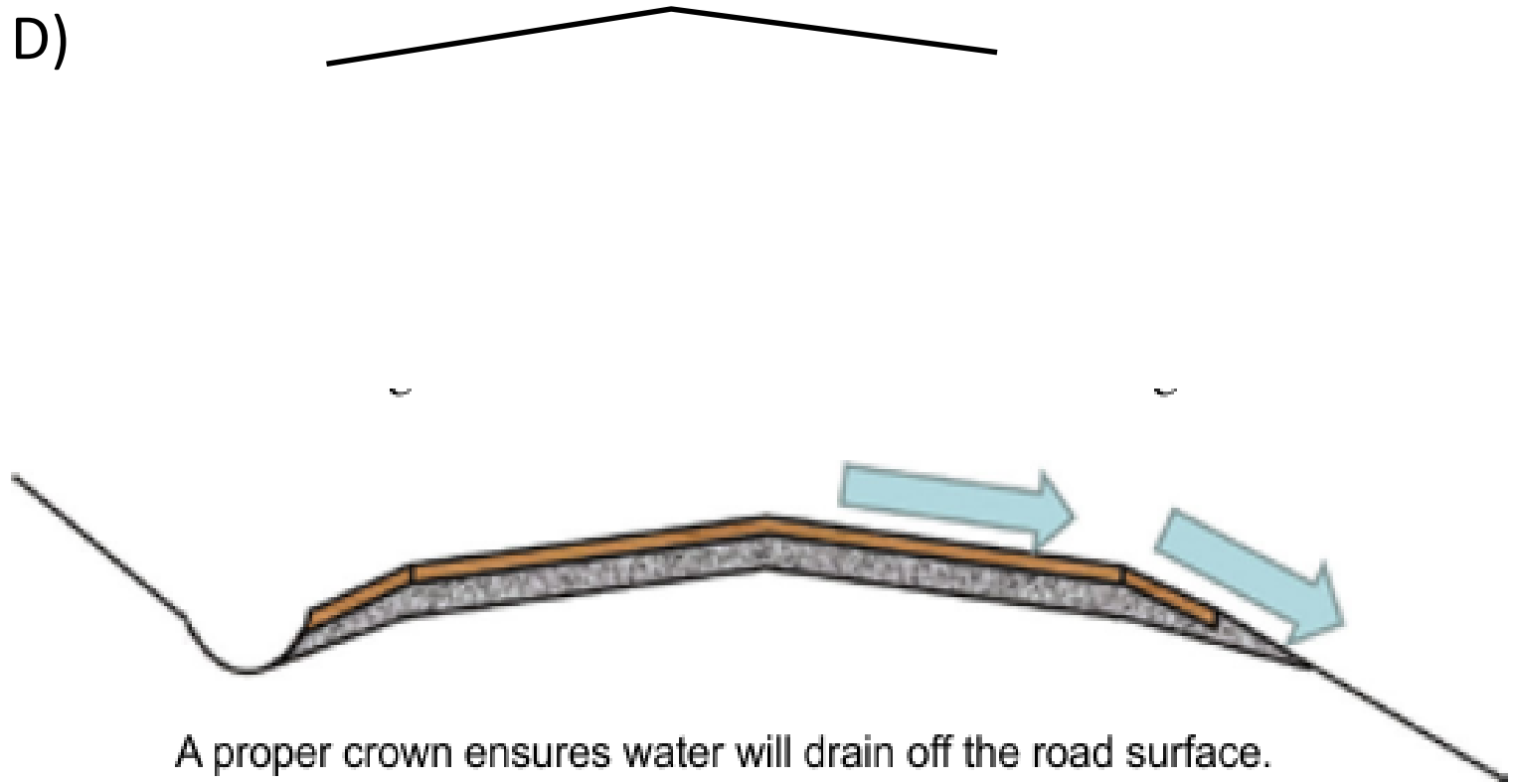


D)



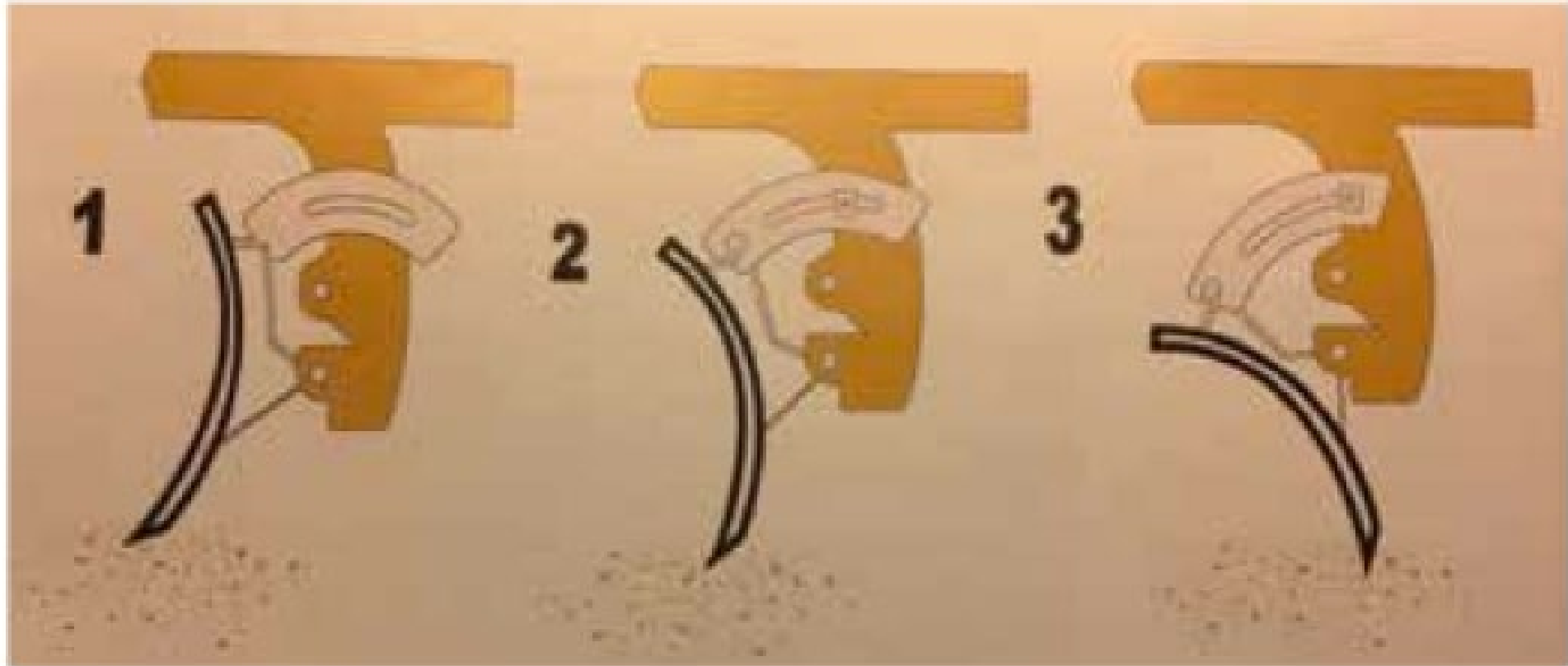
What
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D)



A proper crown ensures water will drain off the road surface.

What is each blade pitch used for?





Smoothing Procedure

- 1) Determine the road length for smoothing.
- 2) Place temporary work zone traffic control.
- 3) Tilt the moldboard forward to create a dragging action.
- 4) Angle the moldboard at 30 to 45 degrees to spread the loose material.
- 5) Tilt the front wheels 10 to 15 degrees from vertical in the direction the aggregate is rolling across the blade.
- 6) Repair minor defects by hand.
- 7) Consider periodically blading the surface against traffic to eliminate aggregate drift at bridges, culverts, intersections, and railroad crossings.



What is this
picture
illustrating?



Grader Tips and Tricks

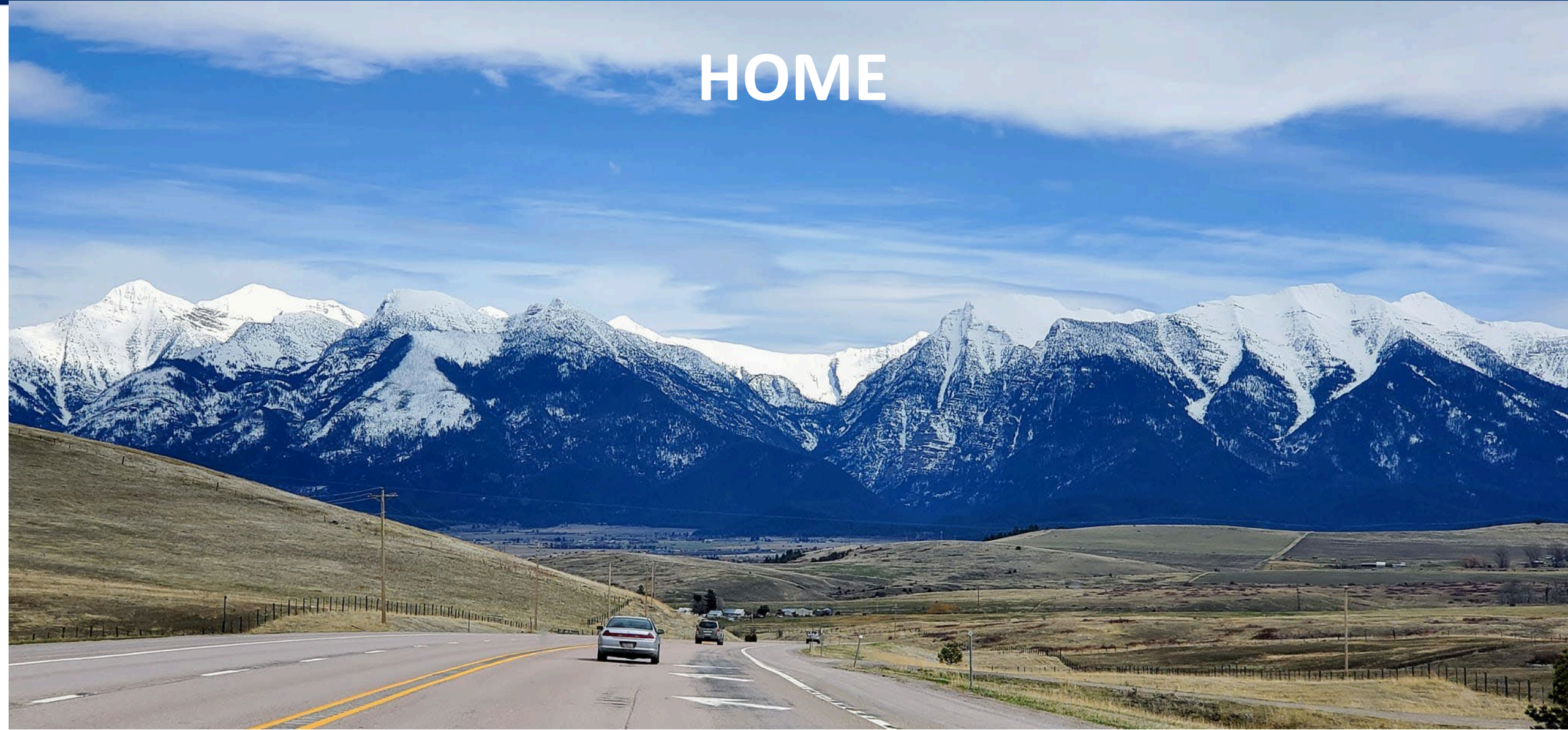
Articulation, wheel lean, blade angle, using side shift, etc.

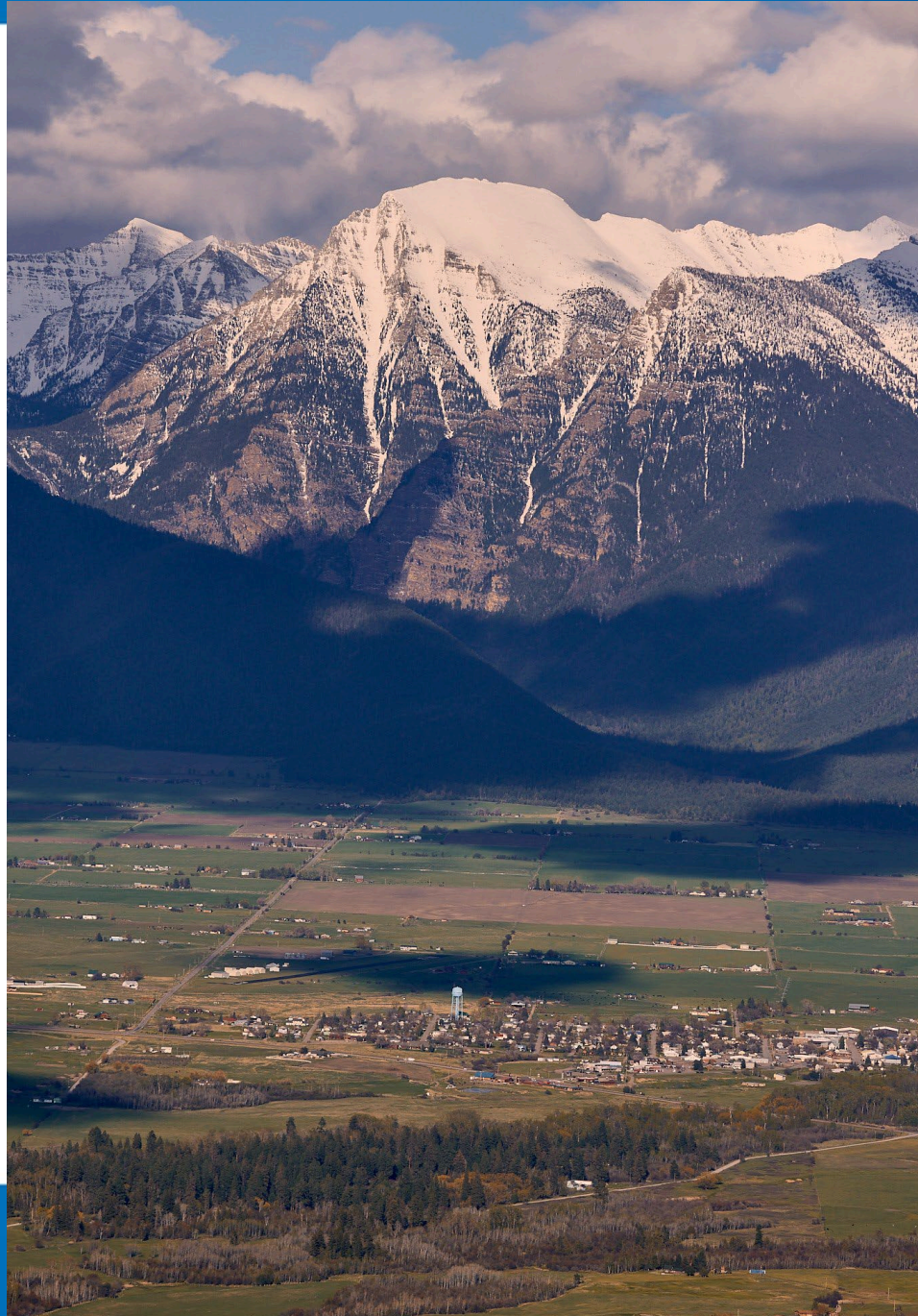


Some Keys to a good gravel road

- Proper Drainage
- Quality Gravel Surfacing
- Prepared and Compacted Subgrade
- Quality (and compacted) Base Course
- Proper Shape of Surface
- Moisture content
- Retaining fines (low dust)
- Minimal oversize aggregate
- Ditches and cross drains
- Chemical additive Stabilization

HOME

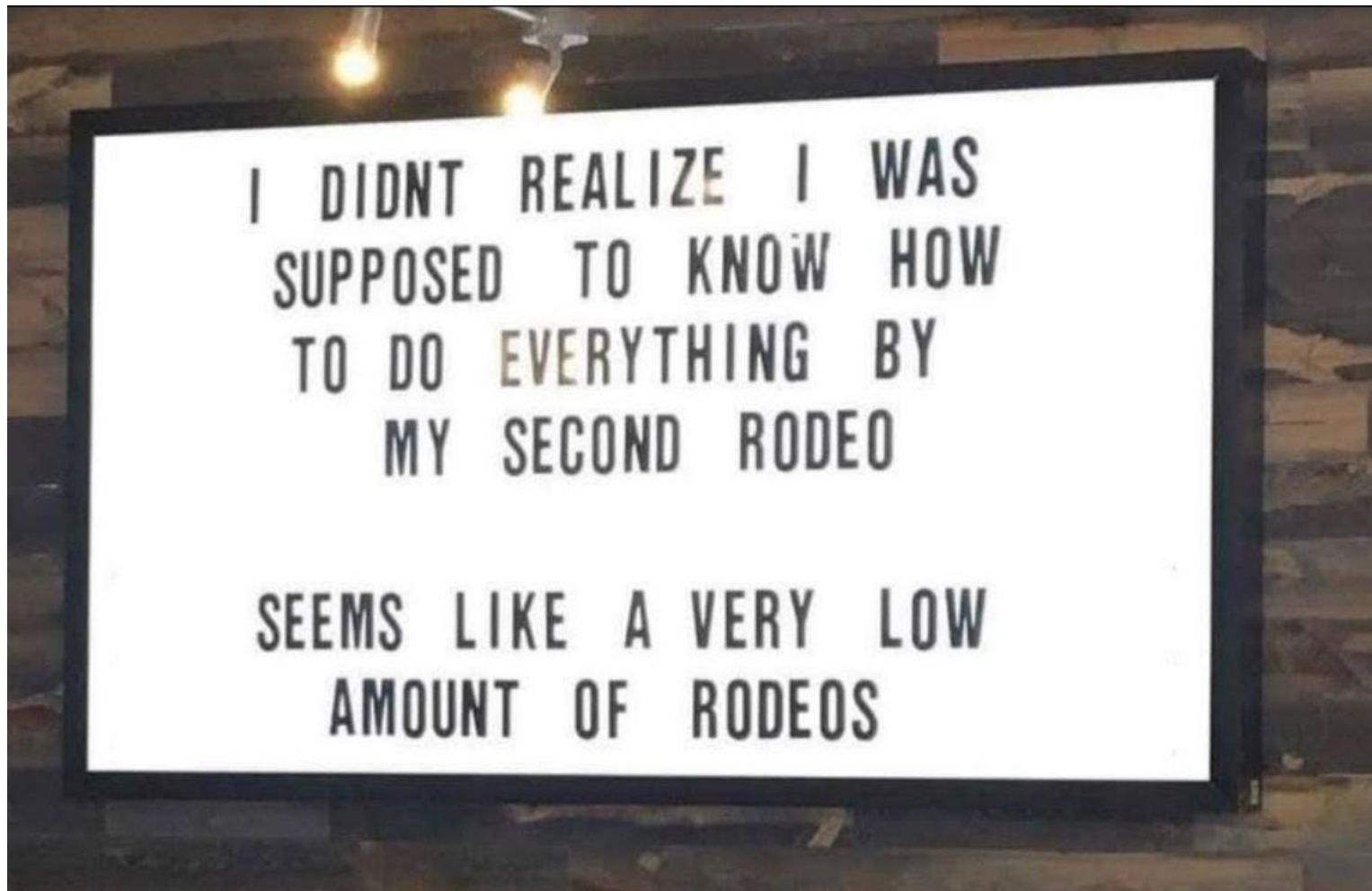




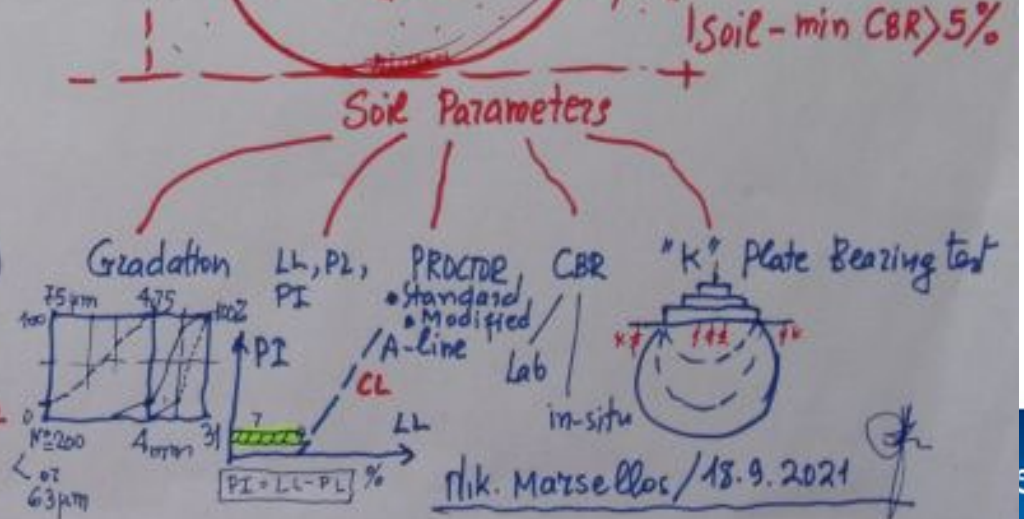
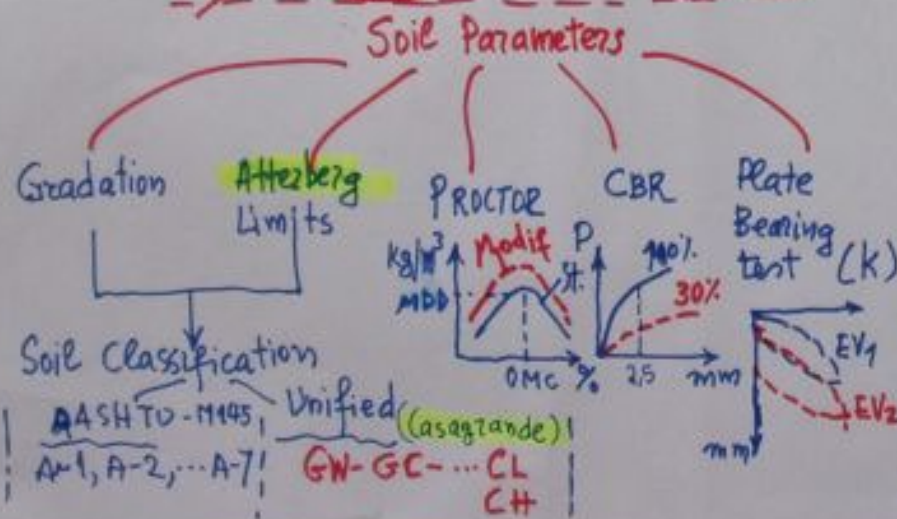
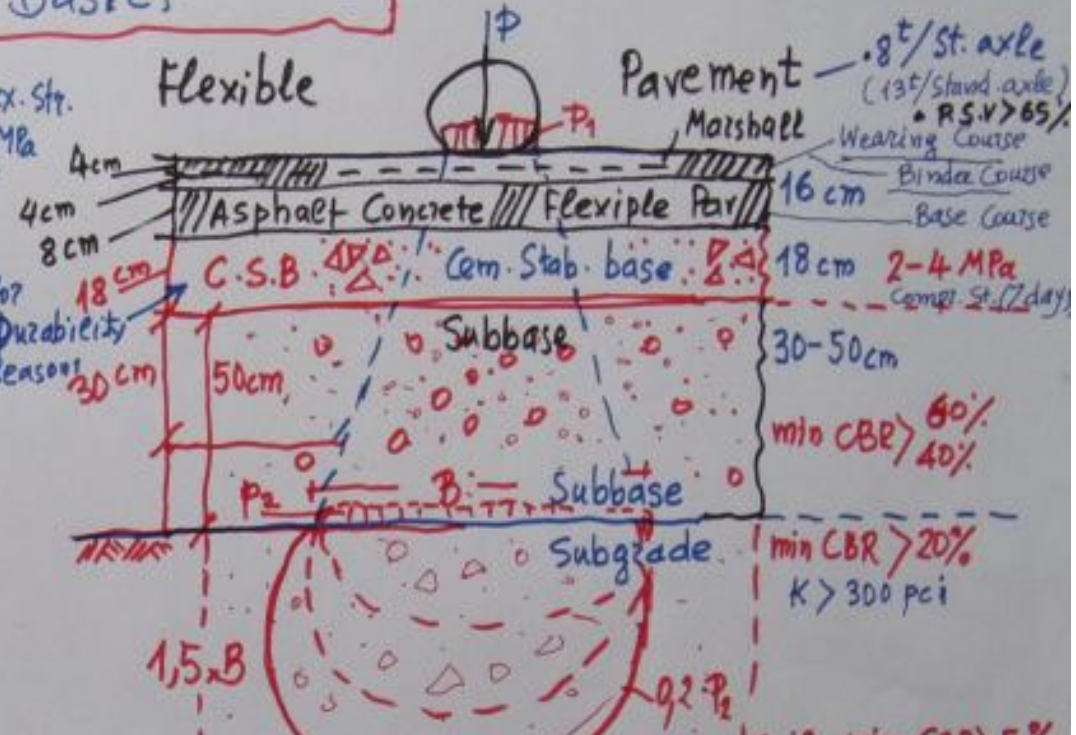
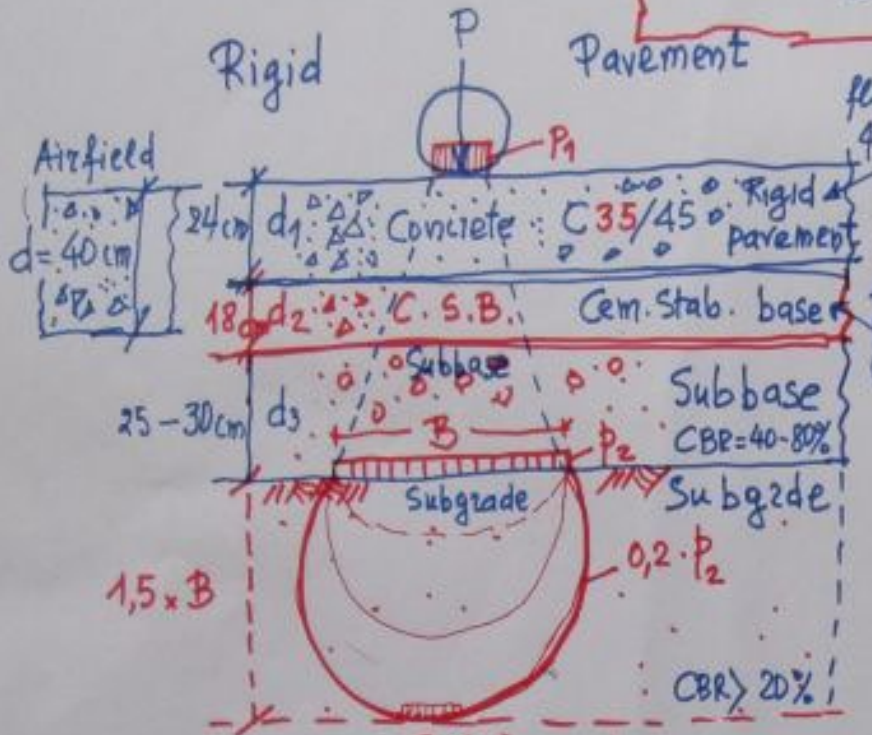
Hey, you can't park
there....!







Highway Engineering Basics



nik. Marsellos / 18.9.2021



“Gravel Road Construction”

See anything wrong?





Agribusiness NWK recently embarked on the second phase of road rehabilitation in North West to provide passable roads to grain producers in the 2022/23 harvesting season. Most of the gravel roads leading to its silos in the province had become virtually impassable due to bad weather and poor maintenance.



Going Backwards to the Days of Dirt Roads

In an effort to save money, some governments are unpaving roads.

February 13, 2017 • [David Kidd](https://www.governing.com/archive/gov-dirt-unpaved-roads.html) <https://www.governing.com/archive/gov-dirt-unpaved-roads.html>

(AP) Generally speaking, the evolution of a road goes from dirt to gravel to asphalt. But some places have started moving in the other direction.

According to the National Cooperative Highway Research Program, local jurisdictions in 27 states -- including Nashville, Ind., above -- have opted to unpave some of their roads.

This can be a real money saver when the cost of repaving a two-lane road can be as high as \$1 million per mile. The cost to convert back to a dirt road can range from \$1,000 to \$100,000 per mile.

Many of these newly unpaved roads have very low levels of traffic. But going to gravel is not without its own costs. Critics point to increased wear and tear on automobiles and rising levels of dust.

