



STRATUM LOGICS

PRS-NEOWEB PRESENTATION

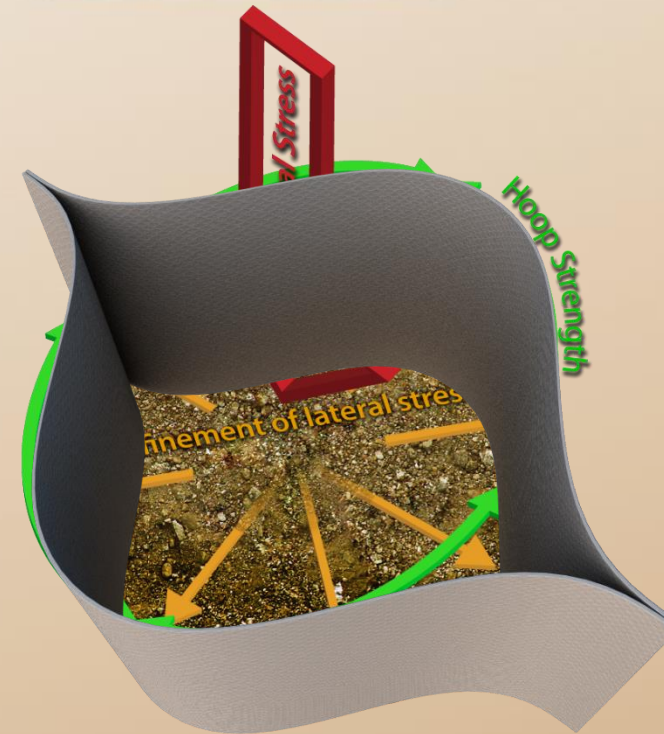
Engineering specialists,
setting the grade,
layer by layer.

- Stratum Logics is a global specialist in applying advanced geosynthetic designs for long-lasting and low maintenance solutions:
 - Access Roads
 - Base of Paved Roads
 - Haul Roads
 - Load Support Pads
 - Slope Protection
 - Erosion Control
- Since 2010, Stratum Logics has provided truly unique civil engineering and EPCM solutions for municipalities and a variety of industries.
- Over 100 years of management experience in these industries, we have the expertise to handle your project, while helping you mitigate environmental impact

WHAT IS A GEOCELL?

Anatomy of a Geocell

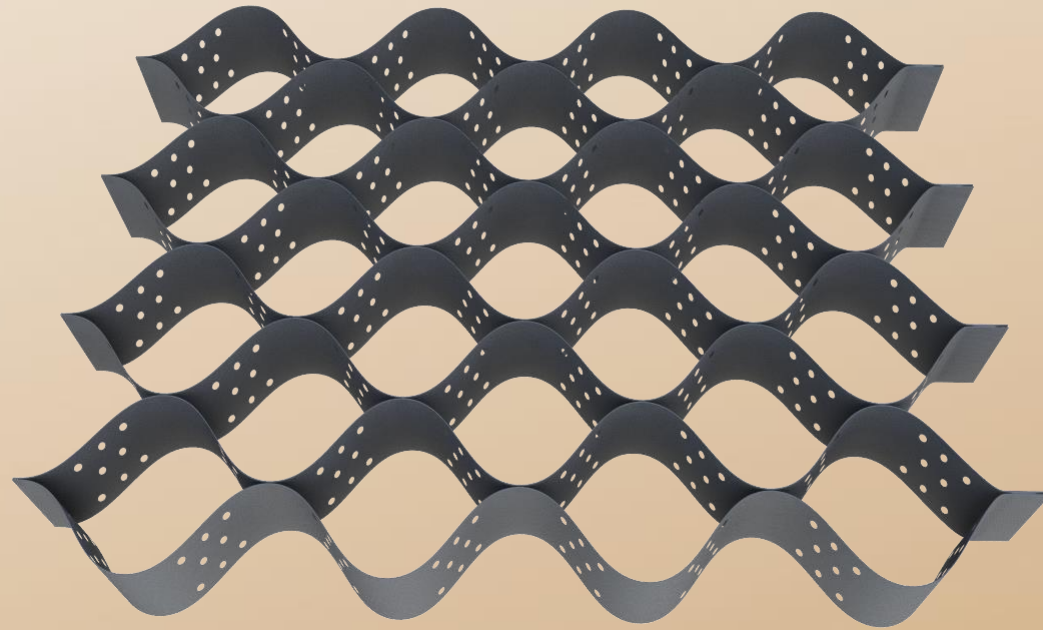
- A geocell is...
 - A confinement system
 - A load distribution system
 - A cost-effective solution for paved & unpaved roads



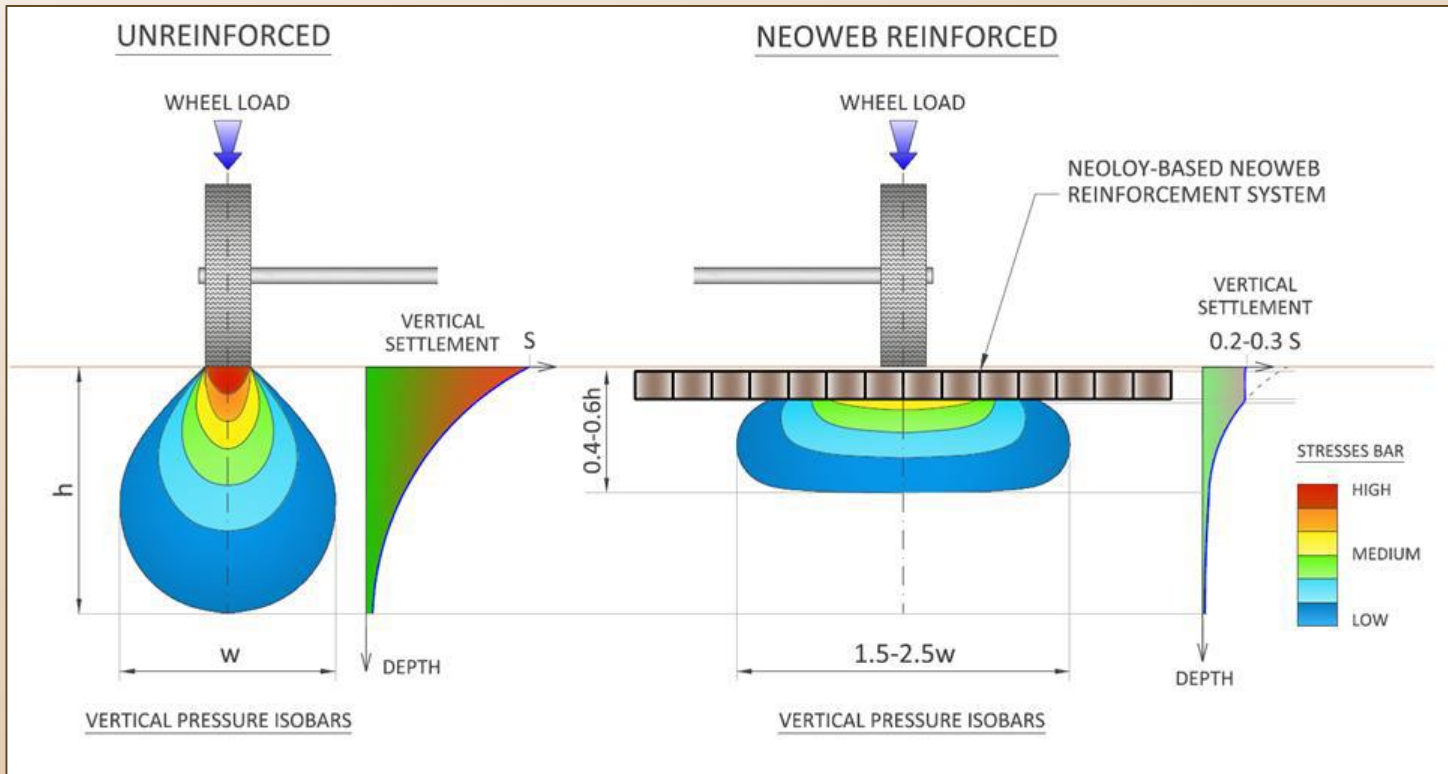
Benefits of a Geocell

■ Geocells...

- Act to distribute vertical stresses
- Maximise performance
- Maximise cost savings



Load Distribution



■ A geocell provides...

- A stiffer layer
- Stiffer layer distributes loads over a wider area
- Which reduces stresses on subgrade
- Eliminating most road upkeep and maintenance

- Neoweb enables usage of inferior material
- Choice of infill depends on the local availability
- Preferably < 12% fines
 - sand
 - Screenings
 - Pitrun
 - gravel
 - RAP
 - RAC
- Top layer infill to be compacted to a minimum of 98% of SPMDD
- Bottom layer to be compacted to a minimum of 95% of SPMDD

67 countries and growing!

Where in Canada is PRS-Neoweb Approved?

Government of Alberta ■
Transportation

Transportation and Civil Engineering
Technical Standards Branch
2nd Floor Twin Atria Building
4999 - 98 Avenue
Edmonton, Alberta T6B 2X3
Canada
www.gov.ab.ca

TELEPHONE NO: 780/427-5578
FAX NO: 780/422-5426
Toll Free Connection Outside Edmonton - Dial 310-0000
www.trans.gov.ab.ca

Product ID: 8255-21

May 28th, 2015

Paradox Access Solutions Inc
#100, 340 Circle Drive
St. Albert, Alberta T8N 7L5
Attention: Ian Martin

Dear Sir:

RE: PRS – Neoweb (Upgrade to Proven)

The PRS – Neoweb product has provided acceptable performance on department trail projects. Therefore, this product will be upgraded to the Proven Products category of the Alberta Transportation Products List as follows:

- Proven Products
 - Stabilization (Soil) – Cellular Confinement Systems – Proprietary

However, please be aware that the department reserves the right to remove any product at any time from the Alberta Transportation Products List. Should your product fail to perform in the future it will be removed from the list.

Inclusion of your product on the Alberta Transportation Products List does not guarantee that the department will use this product. It is your responsibility to promote this product in Alberta.

Sincerely,


Roger Skirrow, P. Eng.
Director, Geotechnical and Materials Section

Attachment

cc Joe Filice – (IEG)
Operations Managers
Construction Managers

Alberta ■

Government of Alberta ■
Transportation

Transportation and Civil Engineering
Technical Standards Branch
2nd Floor Twin Atria Building
4999 - 98 Avenue
Edmonton, Alberta T6B 2X3
Canada
www.gov.ab.ca

TELEPHONE NO: 780/427-5578
FAX NO: 780/422-5426
Toll Free Connection Outside Edmonton - Dial 310-0000
www.trans.gov.ab.ca

Product ID: 8131-3

October 28, 2015

Paradox Access Solutions Inc
#100, 340 Circle Drive
St. Albert, Alberta T8N 7L5
Attention: Ian Martin

Dear Sir:

RE: Neoweb (Upgrade to Proven)

The Neoweb system has provided acceptable performance on department trail project. Therefore, this product will be upgraded to the Proven Products category of the Alberta Transportation Products List as follows:

- Proven Products
 - Erosion and Sediment Control Systems – Cellular Confinement Systems – Proprietary

However, please be aware that the department reserves the right to remove any product at any time from the Alberta Transportation Products List. Should your product fail to perform in the future it will be removed from the list.

Inclusion of your product on the Alberta Transportation Products List does not guarantee that the department will use this product. It is your responsibility to promote this product in Alberta.

Sincerely,


Roger Skirrow, P. Eng.
Director, Geotechnical and Materials Section

Attachment

cc Joe Filice – (IEG)
Operations Managers
Construction Managers

Alberta ■

PRS-Neoweb

Applications in Erosion Control
And Earth Stabilization

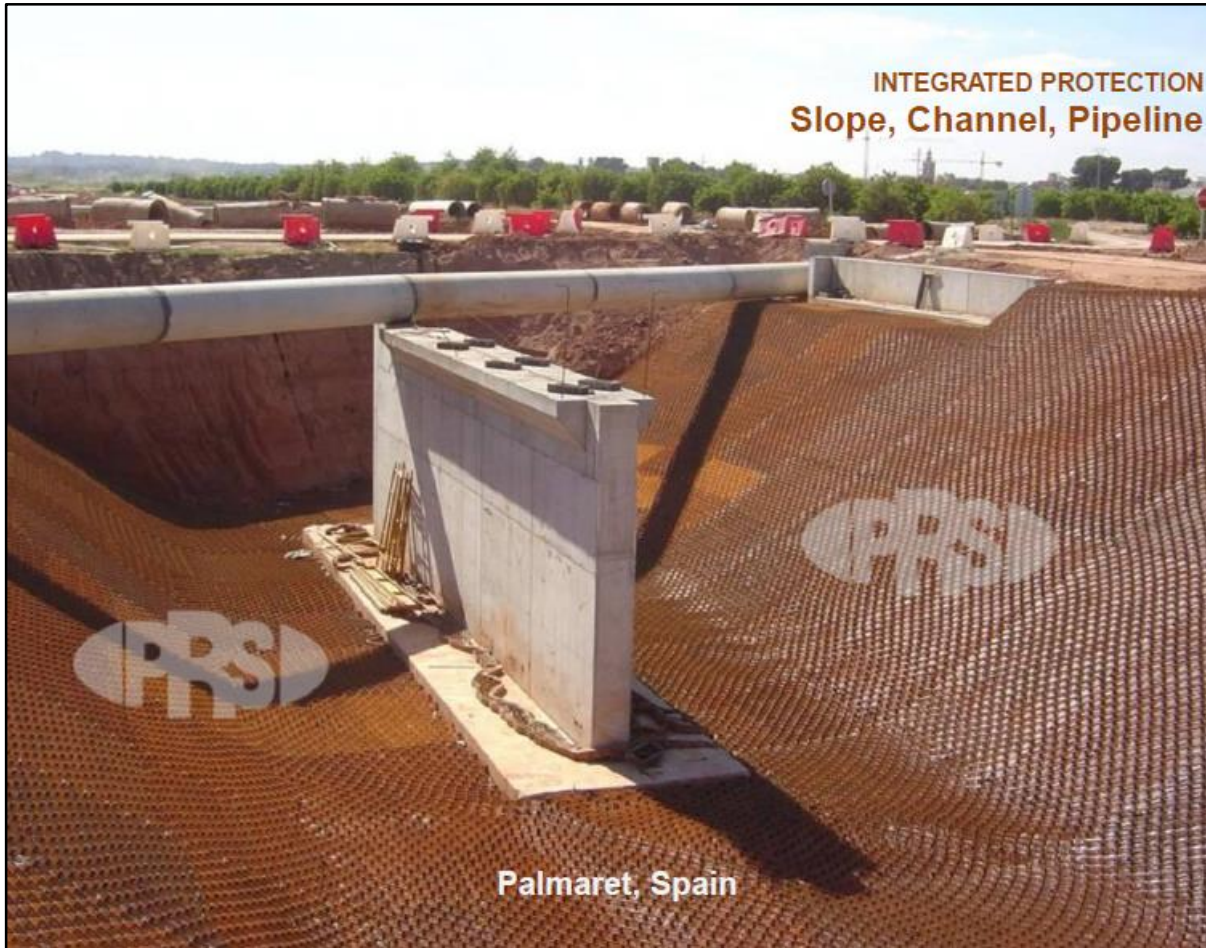


- PRS-Neoweb can prevent erosion on slopes as steep as 60° .
- Tendons used to anchor PRS-Neoweb.
- Erosion control through interface shear forces and geocell tensile strength.
- Infill:



Landscaping

Soil



- PRS-Neoweb protects channel structures from hydraulic stresses and channel erosion.
- Anchors in river bank tethered to PRS-Neoweb.
- Channel protection through cellular confinement and bed armouring.
- Infill:



Vegetative
Topsoil



Granular
Material



Concrete
(for non-erodible channels)



- PRS-Neoweb gravity retaining walls provide good factors of safety against sliding, overturning, and shear.
- The geocells are layered to increase interface shear strength.
- Load distribution and lighter material increase bearing capacity.

■ Infill:



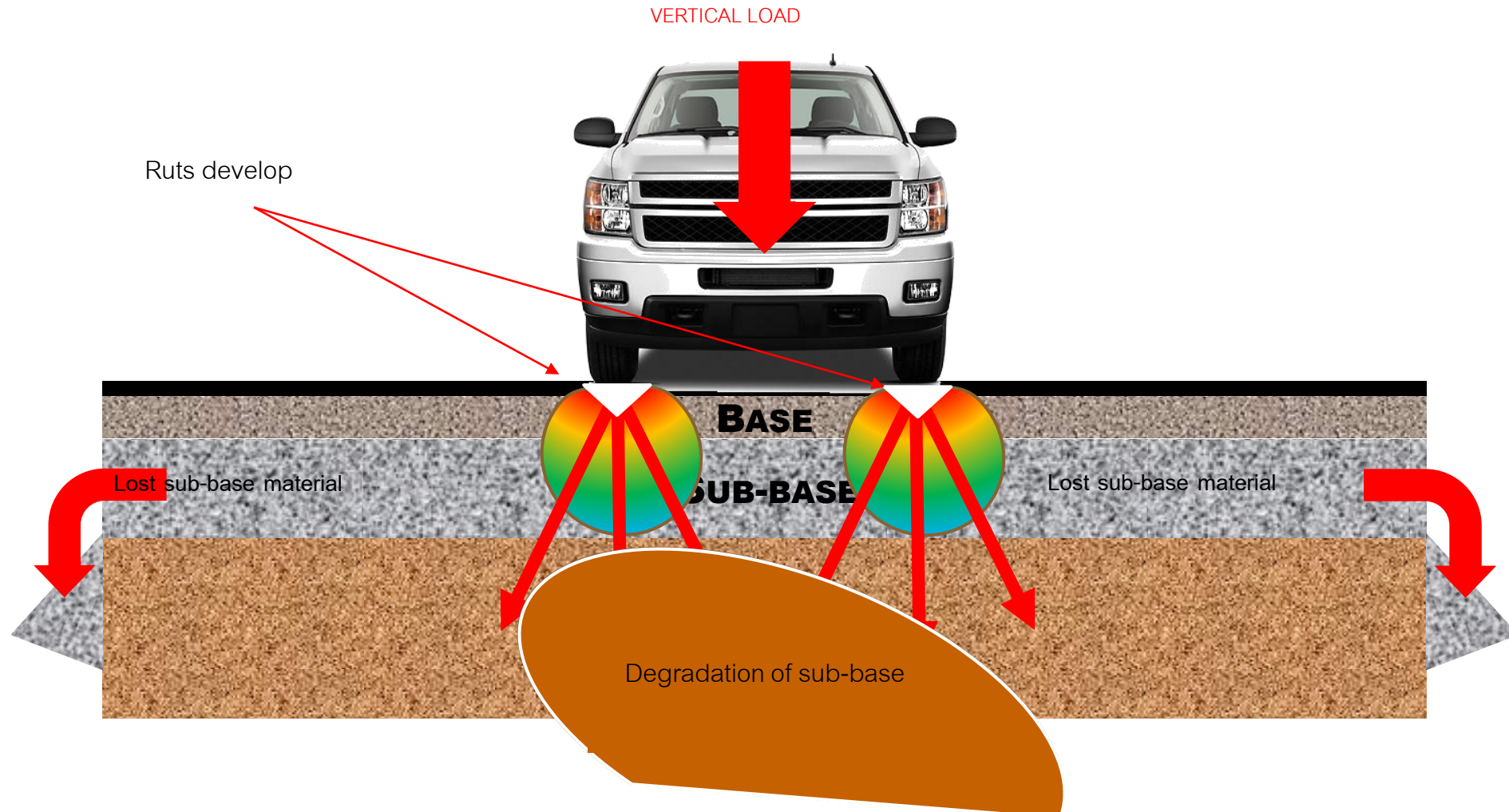
Vegetative
Topsoil

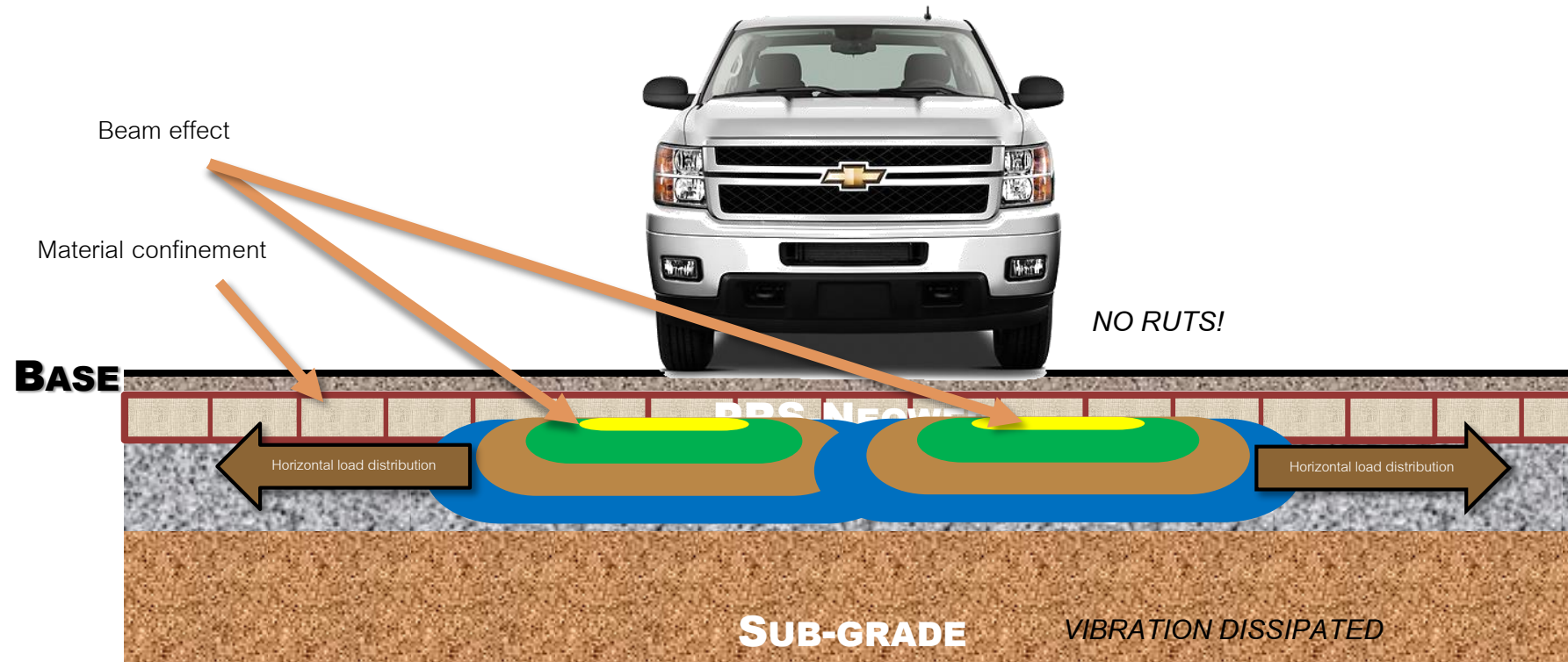


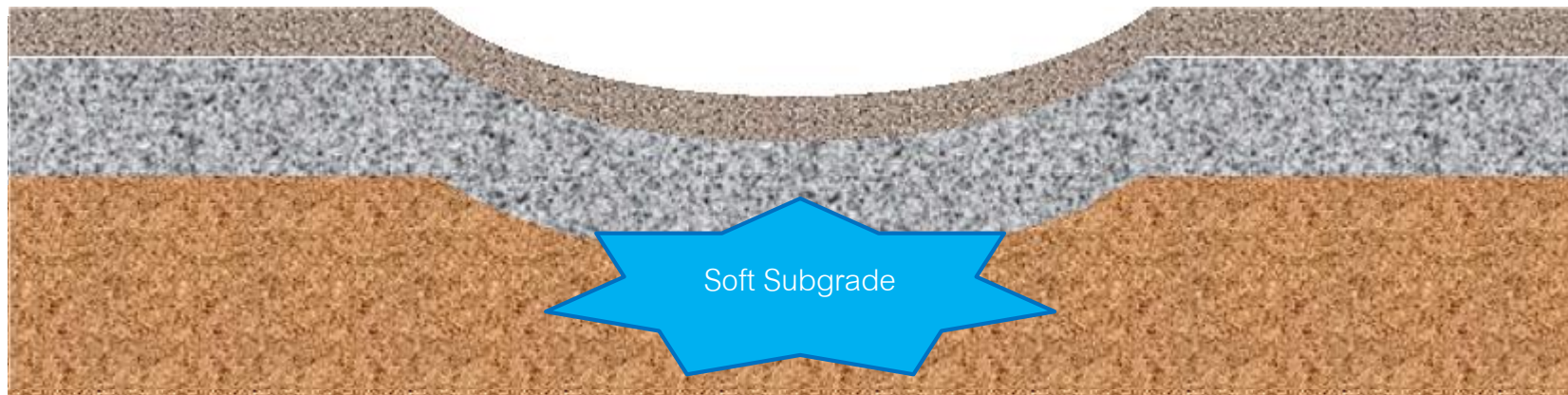
Granular
Material

PRS-Neoweb

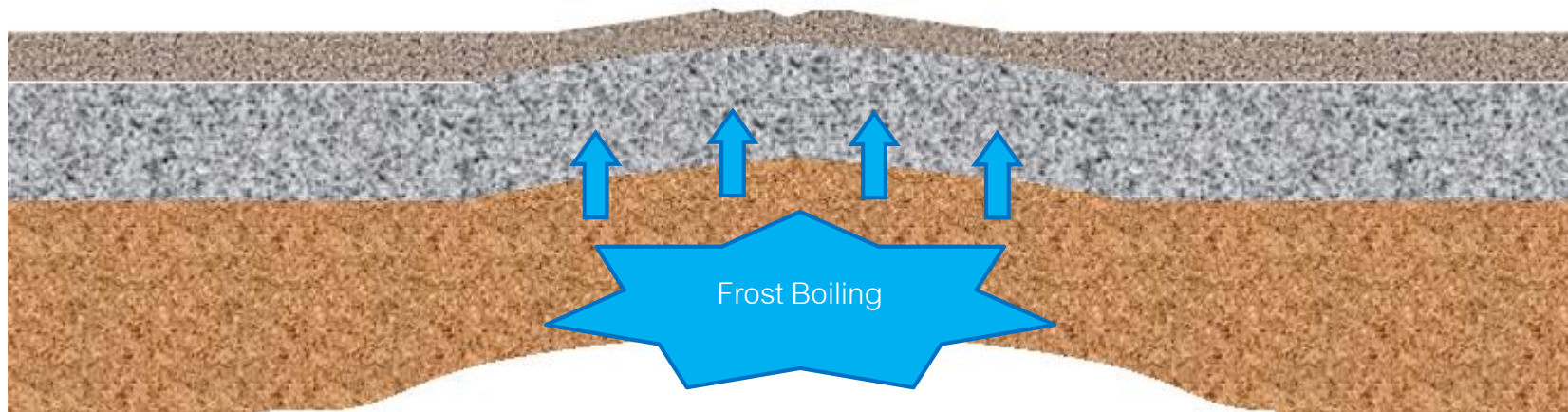
Applications in Road Building

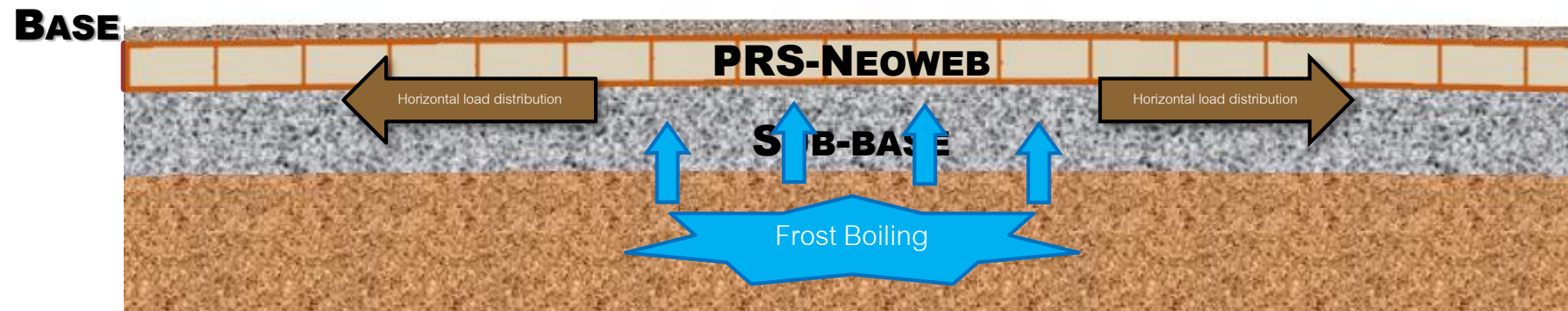












PRS-Neoweb

Where's the Value?

Traditional Builds

Excavate Existing Subgrade

Replace with Engineered Fill

#3 Reduced Compaction Lifts

PRS-Neoweb Build

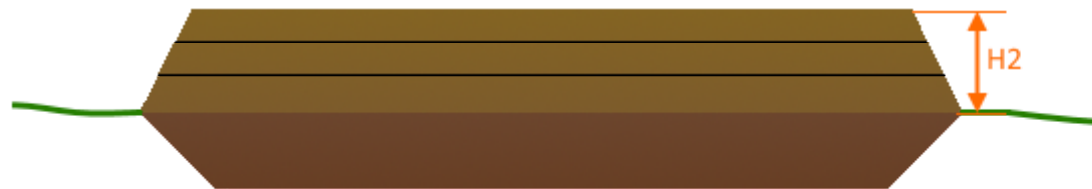
Scarify Existing Subgrade

Re-compact Existing Subgrade



Traditional Builds

Multiple Lifts of Compaction



#1 Reduced Subgrade Prep.

#2 Use Existing Subgrade

#5 Use of Local Material

PRS-Neoweb Build

Single Compaction Lift with PRS-Neoweb



Traditional Builds

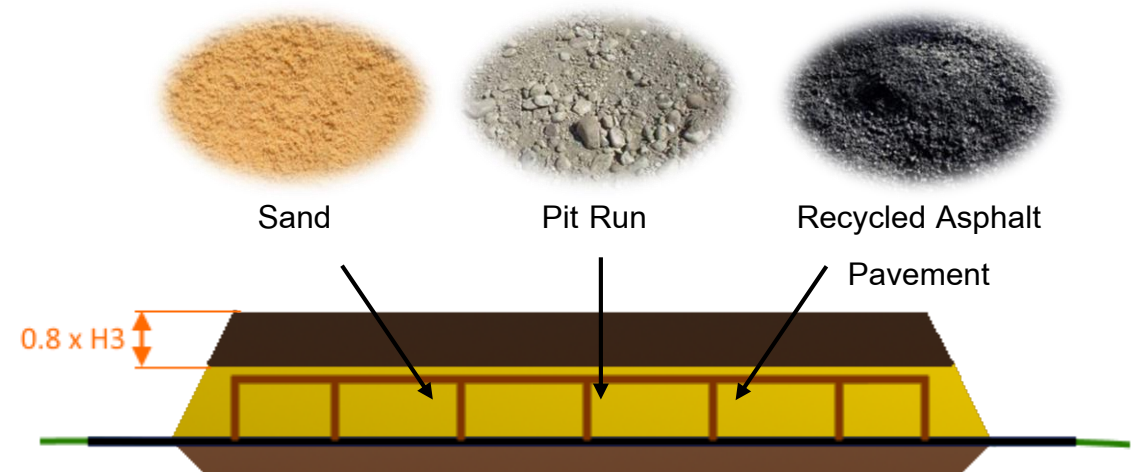


#1 Reduced Subgrade Prep.

#2 Use Existing Subgrade

#7 Reduced Road Right of Way

PRS-Neoweb Build



#3 Reduced Compaction Lifts

#4 Reduced Subbase Material

Traditional Builds



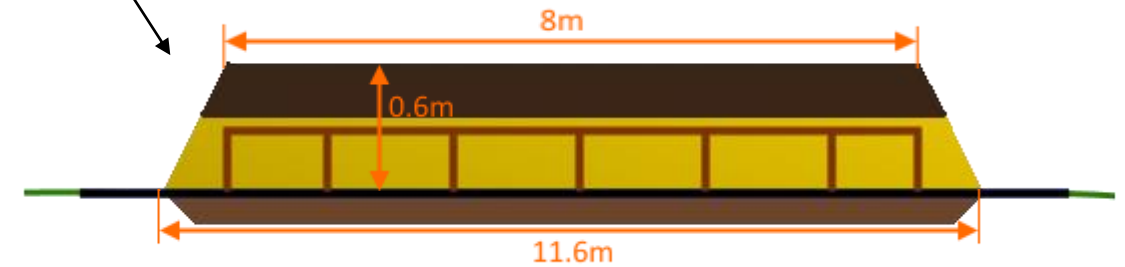
#1 Reduced Subgrade Prep.

#2 Use Existing Subgrade

#7 Reduced Road Right of Way

3 to 1 Side Slopes

PRS-Neoweb Build



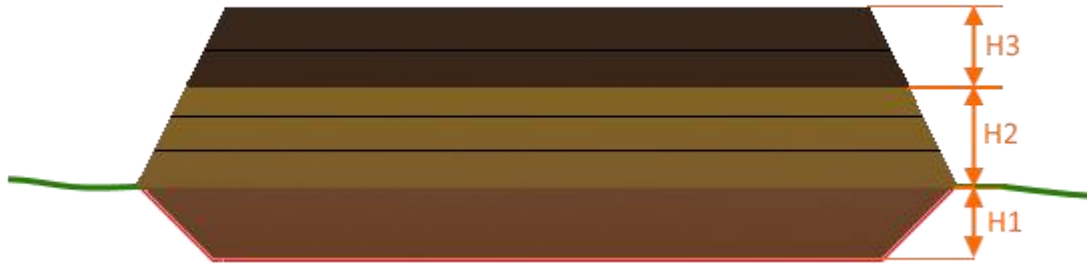
#3 Reduced Compaction Lifts

#4 Reduced Subbase Material

#5 Use of Local Material

#6 Reduced Base Course Material

#7 Reduced Road Right of Way



#1 Reduced Subgrade Prep.

#3 Reduced Compaction Lifts

#5 Use of Local Material

#2 Use Existing Subgrade

#4 Reduced Subbase Material

#6 Reduced Base Course Material



#1 Reduced Subgrade Prep.

#2 Use Existing Subgrade

#3 Reduced Compaction Lifts

#4 Reduced Subbase Material

#5 Use of Local Material

#6 Reduced Base Course Material

#7 Reduced Road Right of Way

- *Less* Aggregate (40%)
- *Less* Construction Time
- *Less* Maintenance
- *Greater* or Equal Strength
- *Greater* Long Term Stability



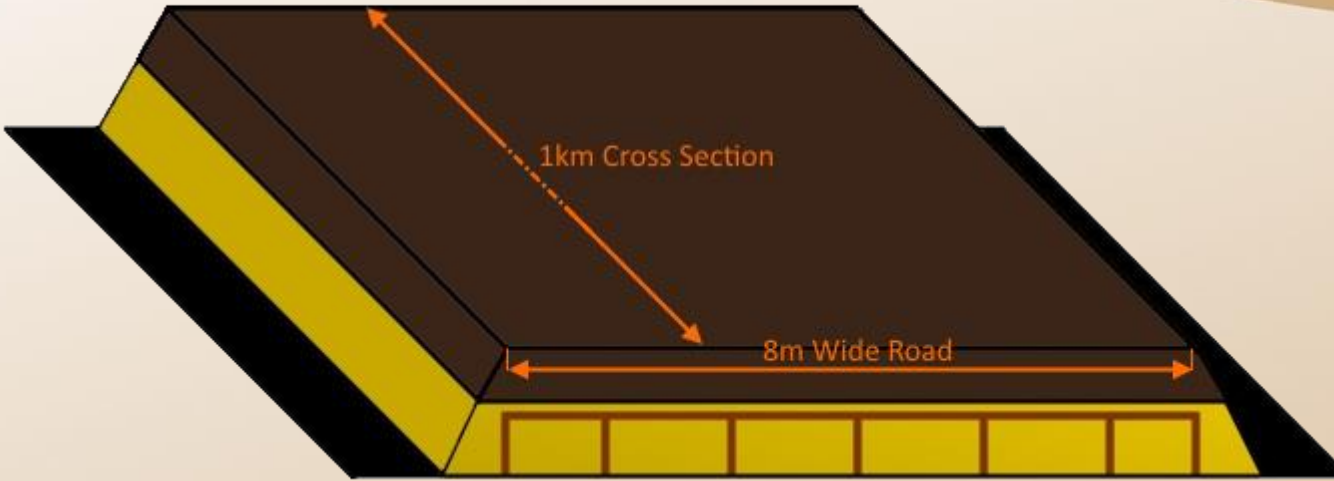
*What's the
Impact?*



40% Less Aggregate using PRS-Neoweb

What's the Impact?

Reduction of CO₂ Emissions



Typical Structure = 9500 tonnes

40% Reduction = 5700 tonnes

Aggregate Saved = 3800 tonnes

Assumptions:

- Haul trucks carry 20 tonnes per load.
- Aggregate pits are 10km away.
- Trucks consume 1L diesel every 2.44km.
- 2.68 kg CO₂ per liter of diesel fuel.



3800 tonnes saves:

- 190 truck round trips.
- 3800 kilometers of travel.
- 1557 liters of diesel.
- 4172 kilograms of CO₂.

The Benefits of PRS-Neoweb



Less aggregate

PLUS Less earthworks

PLUS Less maintenance

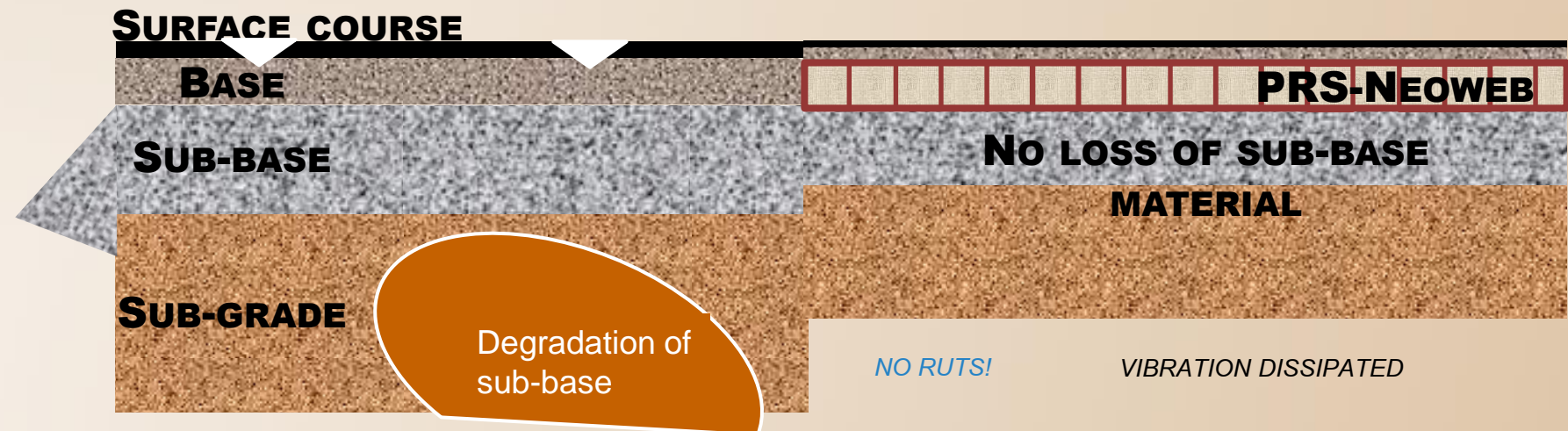
PLUS Less construction time

PLUS Use locally available infill

PLUS Engineer-certified design

EQUALS LONGER LASTING AND LESS EXPENSIVE ROADS

AND GUARANTEED MINIMUM ESALS



Thank you