CASE STUDY

LOAD SUPPORT

Secondary road frost-boil rehabilitation

MD of Pincher Creek

Tp Rd 65 and Tp Rd 52 (W. Kerr Road)

In 2014, the Municipal District of Pincher Creek approached Paradox Access Solutions to install both a section of NPA geocells and a section of geogrid to an area road that was experiencing soft spots. Like many Alberta regions, increased industry traffic has put extreme stresses on aging roadways never meant to support commercial loads. Due to the success of this installation, the MD elected to approach Paradox again for similar issues in 2016.

The 2014 installation utilized BX1200 geogrid, and 330-150-76-P-D NPA geocell.

In 2016 the project encompassed two separate roads. One installation included the same geogrid specification and area as the 2014 installation, and the other utilized Tough Cell® 330-120-60-P-D geocells.

FROM THE DISTRICT OFFICIALS:

"Paradox Access Solutions supplied and installed Tough Cell® geocells to rehab a section of a road in the MD of Pincher Creek which had typically been prone to frost heaves, rutting, washboard and soft spots. The road has performed very well since the install and continues to prove to be a good investment. I recommend paradox Access Soutions and the Tough Cell prodect for consideration on future projects."

- S. Webber,
Public Works Superintendent, MD of Pincher Creek

PROJECT AT A GLANCE

APPLICATION:
Secondary road frost-boil rehabilitaion

LOCATION
Alberta, Canada

DATE OF INSTALL:
May, 2016

CLIENT:
Municipal District of Pincher Creek

An Alberta community that strives to manage growth and support our western heritage while preserving our natural environment.

CONSTRUCTION:
Paradox Access Solutions

The authorized Tough Cell® Master Distributor in North America, specializing in the supply and installation of high quality access solutions and services to customers in the pipeline, utility, municipal, general construction and oil & gas industries.

ENGINEERING DESIGN
Stratum Logics Inc.

Global geotechnical engineering design specialists exceptionally proficient in the deployment of cutting-edge geosynthetics for civil engineering across North America in all types of challenging soils and climates.

Project Highlights

Secondary road frost-boil rehabilitation, Tp Rds 52 and 65 near Pincher Creek, AB

THE CHALLENGE

Several Township Roads within the MD of Pincher Creek, Alberta experienced soft spots of varying severity. Areas where abundant water existed created the weakest spots which required more robust reinforcement than others. These well-used routes served as County and farm access roads for many years but saw an increasing amount of Super-B type haul trucks traveling over them and aggravating the weaknesses in the road structure. Due to the success of a similar road rehabilitation project with Paradox Access Solutions in 2014, the District again approached Paradox to rehabilitate Tp Rd 65 and Tp Rd 52 (known as West Kerr Road).

Existing road conditions prior to rehabilitation

Water issues from heavy rain and high water table prior to Tough Cell® installation

THE SOLUTION

A single layer of 120 mm high Type D Tough Cell® Geocells was installed over prepared subgrade with a separation layer of woven geotextile between the subgrade and the geocell layers.

Total area: 8000m^2

Product(s): 2000m^2 BX1200-equivalent geogrid; 6000m2 of 330-120-60-P-D ToughCell® Geocell; 200ST geotextile

Infill: Locally sourced 40mm gravel to 250mm height

Completion: The installation proceeded and was completed as planned despite unexpected snowfall in the region.

Tough Cell® geocells placed for installation

Woven geotextile and Tough Cell® geocells installed in winter conditions

THE BENEFITS

The MD of Pincher Creek not only benefitted from initial cost savings by selecting a Tough Cell® solution, but was able to effectively put an end to ongoing and chronic road restoration in many areas of the District. The MD now enjoys durable, low-maintenance roadways capable of supporting the region's growing economic and transportation demands.

Infilling of Tough Cell® geocells

Completed, rehabilitated road surface after install

PARADOX ACCESS SOLUTIONS

An industry leader in innovative access solutions, Paradox Access Solutions has provided industrial access and ground reinforcement for the oil and gas, pipeline, utility, municipal and construction industries since 2004. We are COR, CQN, PICS, ISN, ACSA, ARHCA, AVETTA and ComplyWorks qualified, and employ the highest safety standards.

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