



Unpaved heavy haul road rehabilitation

MD of Greeview Forestry Trunk Road / Simonette Hill

A forestry trunk road in the MD of Greenview near Bezanson, Alberta was well known for its poor condition and ride quality. Large volumes of logging and oilfield service trucks utilizing the road created deep ruts. As the oilfield and forestry activity continued to grow, the road saw excessive loading far beyond its original capability.

This road also included a 100m section of steep incline known as Simonette Hill. With more than 25 years of heavy usage, hundreds of thousands of dollars were spent annually on multiple and chronic rebuilds. The MD of Greenview sought a solution that would meet their economic needs as well as the growing transportation demands on the District.

A test site was ordered at km 60 marker of the road, to prove the viability of a NPA Tough Cell® geocell solution for permanent repair of the road and the 100m-long inclined section of Simonette Hill. With the test section satisfactorily concluded, work proceeded on the entire 1.2 km of affected section including the hill.

PERFORMANCE RESULTS:

The District, having sustained multiple rebuilds of this road in the past wanted viable proof of a sustainable solution. With the successful completion of the test section, the MD approved the rehabilitation of this very important roadway using Tough Cell® geocells. In addition to the resulting savings in both capital expenditure and long term operating costs, the ability to eliminate downtime from road closures equates to significant dollars that can be directed elsewhere for the benefit of the community.

CASE STUDY



LOAD SUPPORT

PROJECT AT A GLANCE

APPLICATION:

Unpaved heavy haul road rehabilitation

LOCATION

Alberta, Canada

DATE OF INSTALL:

2016

CLIENT:

Municipal District of Greenview



Located in Alberta's northwest, Greenview is 32,915 square kilometres of fertile farmland, winding rivers, mixed wood forests, and spectacular peaks of the Canadian Rockies.

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.

CONTRACTOR(S):



• WSP - Geometric design

Project Highlights

Unpaved heavy haul road rehabilitation within a Municipal District

THE CHALLENGE

For the past 25 years, an existing Forestry Trunk Road came under increasingly heavy use, experiencing 20-30 passes per hour per day of logging and oilfield service vehicles such as Fluid Super B's in addition to highway legal loads. The route included a 10% inclined section. The clay substrate beneath the original road displayed poor compaction and was unable to support the traffic load generated by the growth of area industry. The MD of Greenview sought a solution to chronic rebuilding efforts costing hundreds of thousands of dollars annually to repair various sections of this road.

THE SOLUTION

The MD of Greenview sought a more permanent method of rehabilitating this road, and approached Paradox Access Solutions to provide a solution. A test section of the road was ordered to prove that our design would yield the desired results. After successful completion of the test section, work proceeded on the 1.2 km-long road including the inclined section known as Simonette Hill. A single layer of 150 mm Type D Tough Cell® Geocells was installed over the prepared and graded existing road and infilled with engineered fill.

Total area: 1.2 km length x 9m width

Product(s): Tough Cell® 330-150-Type D Geocell; woven geotextile

Infill: 300mm AT Class 40 gravel

Completion: Work proceeded without impediment of traffic, as bypass routes were available and the road was ready to open immediately after completion.

THE BENEFITS

The MD of Greenview saw not only initial cost savings in construction but reduced long-term maintenance costs of this roadway. The time-responsive installation of Tough Cell® eased inconvenience during construction. Going forward, elimination of regularly occurring downtime on the road will mean significant dollars per year not lost to road closures for the District.



View of existing Forestry Trunk Road before rehabilitation showing roadway curves, steep hill and bridge



Placement of geotextile, Tough Cell® being stretched



Infilling of Tough Cell®



Tough Cell® road constructed in parallel to allow continuous traffic flow during installation



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, and ComplyWorks qualified and employ the highest safety standards.

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