

ROCKFALL PROTECTION SYSTEM FOR ROUTE NM1016, KORAT NAKHON RATCHASIMA (AKA KORAT), NAKHON RATCHASIMA PROVINCE, THAILAND

Dynamic Barriers

Problem

In 2018, two separate rockfall incidents occurred along road NM1016 at Nakhon Ratchasima (Korat) Province. The area of concern is located nearby to Che Elpend Khaoyai, homestay resort. The road is approximately 27km long and is frequently accessed by tourist and locals. The road falls under the purview of Department of Rural Roads (DRR), Thailand.

The source of rockfall is traced back to the point located approximately 160m above road level. The boulder measured about 2.0m x 1.0m x 1.0m fell about 20m to 30m away from slope toe. The impact caused damage to the road pavement. No loss of life or other damages to property was reported.

DRR subsequently commissioned a study to propose suitable rockfall protection measures for the safety of road users.

Solution

The source of rockfall is located on high and steep slope hence intervention measure close to point of rockfall is difficult and dangerous to construct. Siam Gabions in association with Maccaferri proposed to install rockfall catch fences near to the slope toe.

This solution was supported with rockfall trajectory analysis and barrier design calculation performed by Maccaferri & Siam Gabion technical team using the survey data provided by DRR. The analysis shows that a 4m high 5,000kj rockfall barrier placed 5m away from edge of road can intercept all rockfall before it reaches the road. The length of the rockfall barrier alignment is 80m.

The location of barrier alignment is easily accessible by the contractor as it is just beside the road. Rockfall barriers come in a prefabricated assembly kit that are easy and fast to install. The installation was completed successfully in a few weeks.

Client: Department Of Rural Roads (DRR)

Designer / Consultant: Siam Gabions Co. Ltd.

Contractor: Kenber Geotechnic (Thailand) Co. Ltd.

Products used (Qty.)

- Dynamic Barriers 5,000kj = 80.0m

Date of construction: 11/2019 - 12/2019



Source of Rockfall (Photo Taken From Road Level)



Runway Rockfall Debris Landed at the Other Side of Road



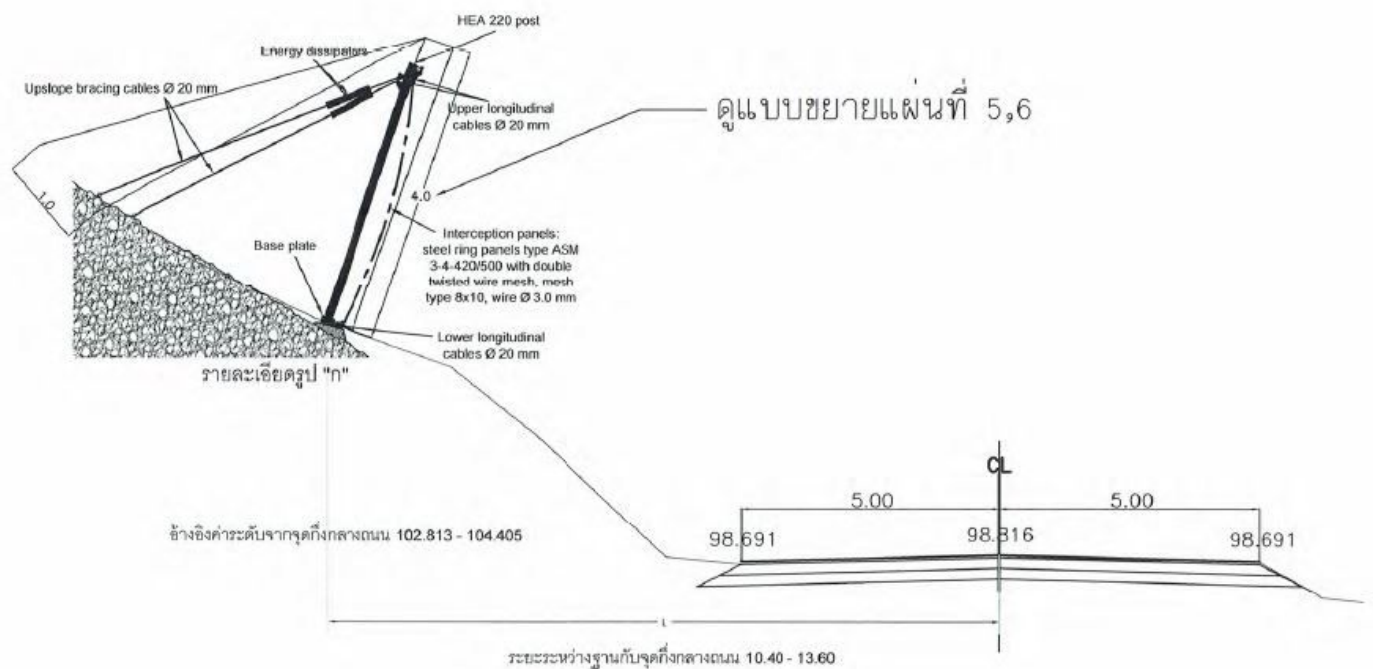
Damaged Pavement Due to Rockfall Debris Impact



Rockfall Barrier Completed Installation



Rockfall Barrier Completed Installation



Typical Section of Rockfall Protection Measure

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