

İZMİR - İSTANBUL HIGHWAY PROJECT

BURSA ORHANGAZI, MARMARA, TURKEY

Mass Gravity Retaining Walls

Problem

Kamu Özel Sektör Ortaklığı Genel Müdürlüğü Gebze-Orhangazi-İzmir (Including İzmit Bay Crossing and Connection Roads) Motorway Build-Operate-Transfer Project Orhangazi - Bursa section has split type slopes with weathered limestone / marble formation opened with 1/4 inclination located approximately between Km: 52 + 540 and 62 + 500. To protect against coarse and medium-sized block fall risks due to superficial alterations on the disintegrated limestone / marble formation slopes, examinations were made by our technical team, static calculations and projections were carried out in the light of the data obtained, and surface slope protection applications were carried out with the materials having appropriate capacity.

Solution

Between Km: 52 + 780 and 58 + 600 (Including AB and GH Branches):

Steel Grid HR100 (reinforced with steel ropes in a vertical direction 1 per 1 m) and High Energy Damper (HEA) Steel Rope Panel supported with high capacity rock bolts are constructed as surface protection. Steel Grid HR100 type composite wire mesh system against medium-sized blocks has been designed according to the calculations, and Rock Bolt reinforced HEA Panel Systems are used for the safety of blocks larger than 3 m³. Rock bolt lengths were determined according to the analyzes made separately for each slope region. The analyzes were carried out according to the MACRO1 Static Analysis Program.

Between Km: 62+400 and 62+530:

Gabion System Wall was manufactured as a gravity type retaining structure to provide protection against landslide-type sliding movements caused by loose soil formation in the section located in this range of Km. With the MACSTARS W Static Analysis Program, the Seismic and Static load calculations of the system were made, and the project designs were carried out by dimensioning the wall according to the long-term analysis.

Client: NÖMAYG GEBZE-İZMİR OTOYOLU İNŞAATI A.Ö

Designer / Consultant: MACCAFERRI TURKEY

Contractor: -

Products used (Qty.)

- Gabion	N/A
- HEA Panels	N/A
- Steelgrid	N/A

Date of construction: 06/2015 - 02/2016



Steel Grid HR100, HEA Panel And Rock Bolt Application



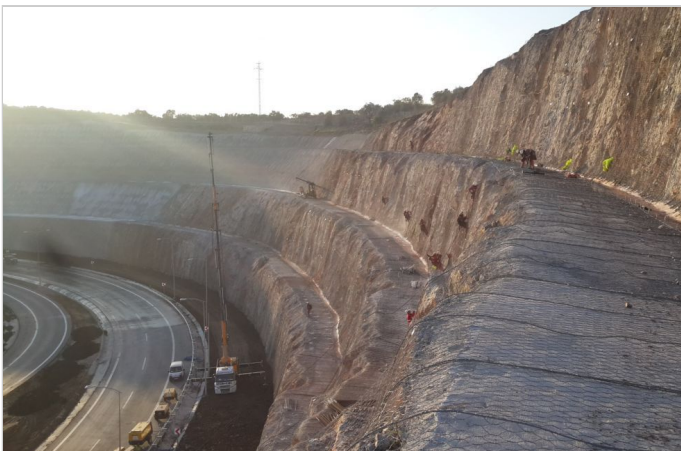
Secured Drapery System



Secured Drapery System



Secured Drapery System



Secured Drapery System



Sweeping the Rocks



Secured Drapery System