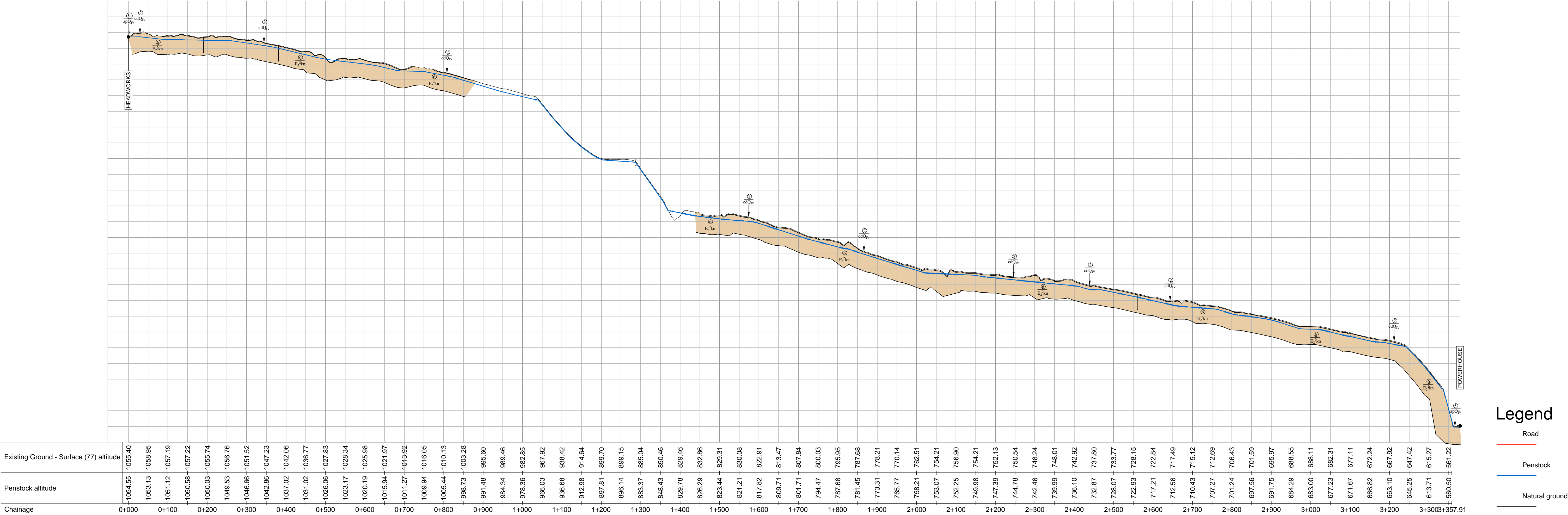


PENSTOCK LONGITUDINAL PROFILE  
H/V 1:5000/2500



Legend

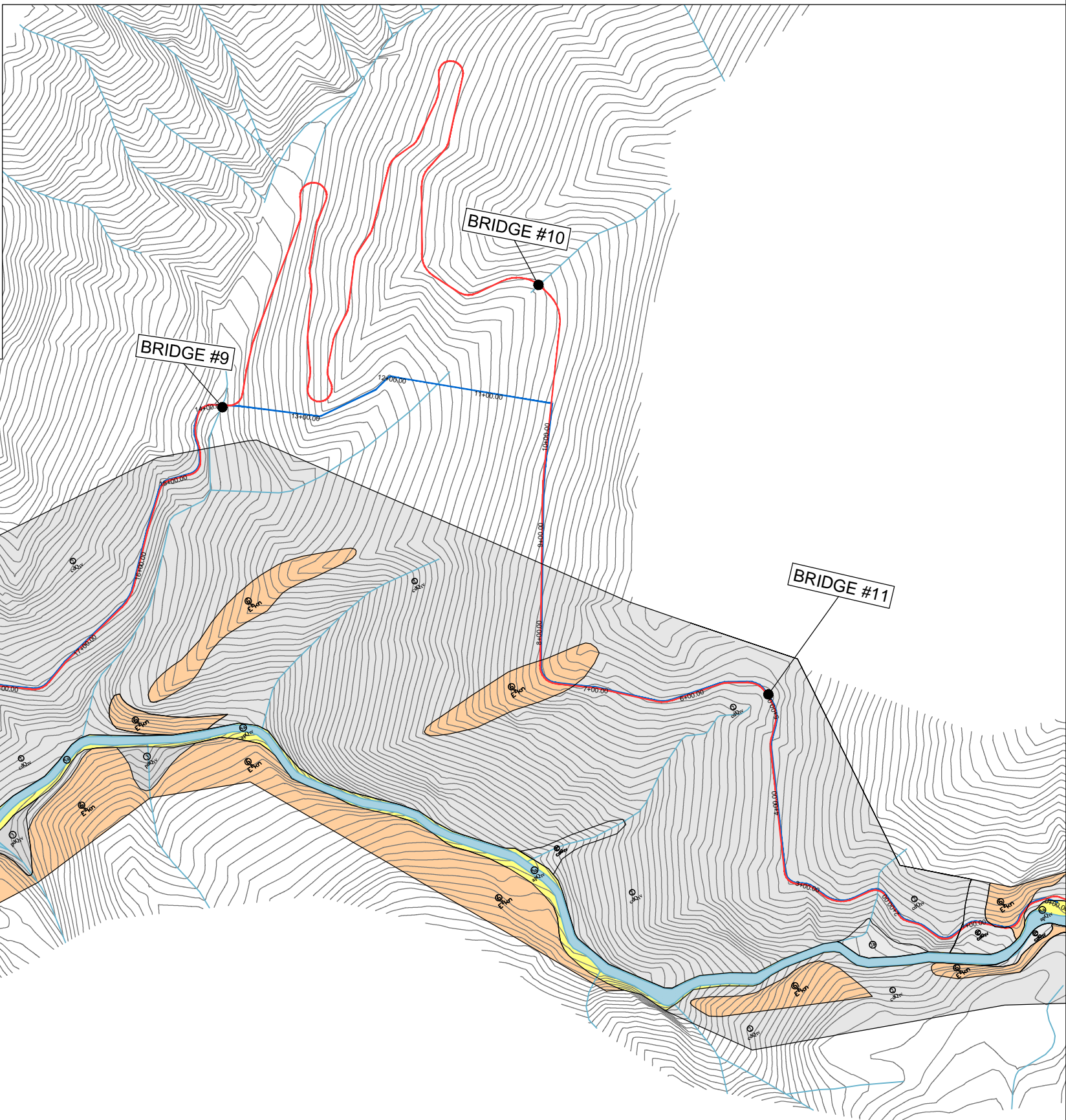
- Road
- Penstock
- Natural ground

Engineering-geological Classification of Soils

PARAMETER VALUES OF PROPERTIES AND OTHER DESIGN DATA OF SOILS & ROCKS OBSERVED AT SASHUALA HPP LOCATION AREA									
Station #	Description of Soils	Density $\rho$ [t/m <sup>3</sup> ]	Internal friction angle $\phi$ [°]	Cohesion $c$ [kPa]	Deformation modulus, $E_s$ [MPa]	Uniaxial compressive strength, $\sigma_{cu}$ [MPa]	Atterberg limits (shrinkage limit, liquid limit, plasticity index) [%]	Soil test group (per IS: 2720-1980)	Soil classification (per IS: 2720-1980)
1	Moist, brown, stiff, slightly sandy, gravelly (at some places slightly gravelly), silty CLAY. Gravel is angular and sub-angular (dilatant-collapsible).	1.88	25.0	13.1	13.37	230	-	1:1.5	p-15h Group II (Vol-1)
2	Sandy, silty-clayey GRAVEL and COBBLES with some boulders. Gravel and cobbles are angular and sub-angular (collapsible-collapsible).	2.0	33.4	26.0	51.82	450	-	1:1	p-15h Group IV (Vol-1)
3	Sandy, silty-clayey (at some places very sandy, or very silty-clayey) GRAVEL with cobbles and boulders. Gravel and cobbles are angular and sub-angular (dilatant-prolual).	2.0	32.3	28.4	48.24	450	-	1:1	p-15h Group IV (Vol-1)
4	Sandy, silty-clayey COBBLES with gravel and boulders. Cobbles and gravel are sub-angular and sub-rounded (prolual).	2.0	32.0	28.0	48.0	450	-	1:1	p-15h Group V (Vol-1)
5	Sandy, slightly silty-clayey, COBBLES with gravel and boulders (at some places with large (1-5m) boulders). Cobbles and gravel are rounded and sub-rounded (alluvial-prolual).	2.2	40.0	10.0	60.0	600	-	1:1	p-15h Group V (Vol-1)
6	Volcanic-sedimented rocks, massive lavas, lava breccias, tuff breccias and tuffs of (2-62) - - - 5000 - - 440 102	2.62	-	-	5000	-	440	102	Volcanic (Vol-3)

Note: Inclination of up to 12 m high mass-made slope above water-table, as well as the inclination of up to 12 m and higher slope below water-table (for saturated soils) should be calculated individually.

PENSTOCK PLAN  
1:4000



Remark(s):

Reference(s):

d				
c				
b				
a				
-	Initial version	31.05.18	MUGI	TP
Index	Revisions	Date	Draftsman	Verified

ENERGY DEVELOPMENT GEORGIA LTD

SASHUALA HPP 1	PHASE 2
GEOLGY	SCALE 1:2500/5000
PENSTOCK	FORMAT A1
GENERAL GEOLOGICAL MAP AND PROFILE	DRAFTSMAN MUGI
	DATE 31.10.2017
	VERIFIED TP
	APPROVED REPA

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