

5 . List of Data Obtained

No.	Name of Document	Style	Published by
1	Estatísticas do Distritos	PDF	Instituto Nacional de Estatística
2	Multiple Indicator Cluster Survey	PDF	Instituto Nacional de Estatística
3	District Administration map, Gurue	Copy	Gurue district
4	District Administration map, Ile	Copy	Ile district
5	Strategic Development Plan for the Zambezia Province	PDF	Government of Zambezia Province
6	Potencial Opportunities of Zambezia	PDF	Government of Zambezia Province
7	Orcamento do Sector de Estradas para 2011	Copy	FE
8	Lei de Terras [1] 1997/19	PDF	Mozambican government
9	Politica de Reassentamento do Sector de Estradas	PDF	ANE
10	Resolution No. 10_95 on the National Land Policy	PDF	Mozambican government
11	Reglamnento Lei de tierras 98/66	PDF	Mozambican government
12	Sample report for RRP(Estudo de Viabilidade, Avaliacoes de Impacto Ambiental e Social, Desenho e Supervisao de Obras da Estrada Namialo a Metoro, Provincias de Nampula e Cabo Delgado, Mozambique)	Copy	ANE
13	Lei do Ambiente_1997/20	PDF	Mozambican government
14	Regulamento relativo ao Processo de Avaliação do Impacto Ambiental_2004/45	PDF	Mozambican government
15	Handbook on Environmental Assessment Legislation in the SADC Region(Extracted Mozambique)	PDF	Development Bank of Southern Africa and Southern African Institute for Environmental Assessment (SAIEA)
16	Programa nacional do meio ambiente95_5	PDF	Mozambican government
17	Resolucion 95/5, Politica Nacional de Ambiente	PDF	Mozambican government
18	Anexo Tecnico ao Regulamento da Lei de Tarras (Diploma ministorial No.29-A/2000)	PDF	FAO based on Mozambican government
19	Sample report for EIA(Estudo de Viabilidade, Avaliacoes de Impacto Ambiental e Social, Desenho e Supervisao de Obras da Estrada Namialo a Metoro, Provincias de Nampula e Cabo Delgado, Mozambique)	Copy	ANE
20	Sample report for Environmental Management Plan(Plano de gesion Ambiental do Project de Rehabilitacion da Estrada Namacurra-Rio Ligonha, Provincia da Zambezia)	Copy	ANE

No.	Name of Document	Style	Published by
21	Project Specification of Rehabilitation of the Road between Namacurra and Nampevo	Copy	Euro Fund
22	Final Report of Rehabilitation of Road N103 between Gurue and Magige in Zambezia Province	Copy	ANE
23	ANE's Design Standards (Draft)	Copy	ANE
24	Rainfall of Cuamba, Ile, Grue	Copy	Institute Nacional de Meteorologia
25	Temperature of Cuamba, Ile, Grue	Copy	Institute Nacional de Meteorologia
26	Seismic data of Zambezia Province	Copy	Ministerio dos recursos minerais

6. Other Relevant Data

6.1 Memorandum of Agreement at 1st Site Survey (19/Apr/2011)

**Memorandum of Agreement
between
Outline Design Study Team and National Road Administration (ANE)
on
the Project for the Construction of Bridges between Ile and Cuamba**

Both Parties agreed the following items based on the discussion on 19th April 2011.

- (1) The approach road for the bridge at the location of existing bridge shall be 50m at both side in principle and at the location parallel to the existing bridge shall be adjusted to the existing road as shown Figure-1.
- (2) Bridge length of each location are determined based on the maximum discharge of each river analyzed through the study and are summarized tentatively in Table-1.
- (3) The bridge widths are 9.6m for two lane bridge and 5.2m for one lane bridge as shown in Table-2 and Figure-2.
- (4) The ratio of embankment slope for the approach road shall be gentler than 1:1.5.
- (5) Ducts for accommodated public utilities such as optical fiber cables shall be taken into account in the design.
- (6) Vertical clearance over H.W.L shall be one meter.
- (7) Following standard will be applied for the study.
 1. Design Standard
 - ANE's Design Standards (Draft)
 - Code of Practice for the Design of Road Bridges and Culverts issued by SATCC
 - Design Specification for Highway Bridges issued by Japan Road Association (JRA)
 - Technical Recommendations for Highways (South Africa)



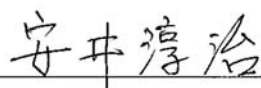
- Code of Practice for the Design of Highway Bridges and Culverts (TMH7 Part 3)
- Code of Practice for the Design of Foundation for Buildings (SABS 0161-1980)
- Code of Practice for the Structural Use of Concrete (SABS 0100-1)
- Code of Practice for Pile Foundations (SABS 088-1972)

2. Design Load

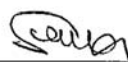
- Dead Load
Dead load specified by SATCC shall be applied.
- Live Load
NA, NB, NC live load specified by SATCC shall be applied.
- Other Load
Other load including seismic coefficient, wind shall be in accordance with ANE's Bridge Design Manual.

3. Basic Concept for Design

- High Water Level
High water level will be determined based on the hydrological study in the outline design study.
- Bridge Type
Pre-stressed concrete bridge and/or Reinforcement Concrete bridge will be adopted for the Project.



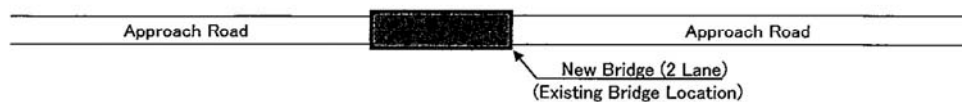
Mr. Junji Yasui
Chief Consultant
JICA Preparatory Survey Team
(Outline Design Study)



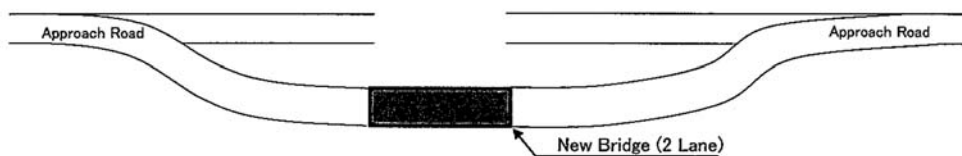
Mr. Ismael Sulemane
Director of Projects
National Road Administration
The Republic of Mozambique

Figure-1 Proposed Bridge Location (Tentative)

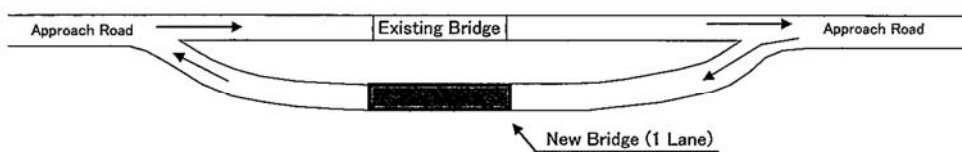
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Type-B (No.1, No.11, No.12, No.13)

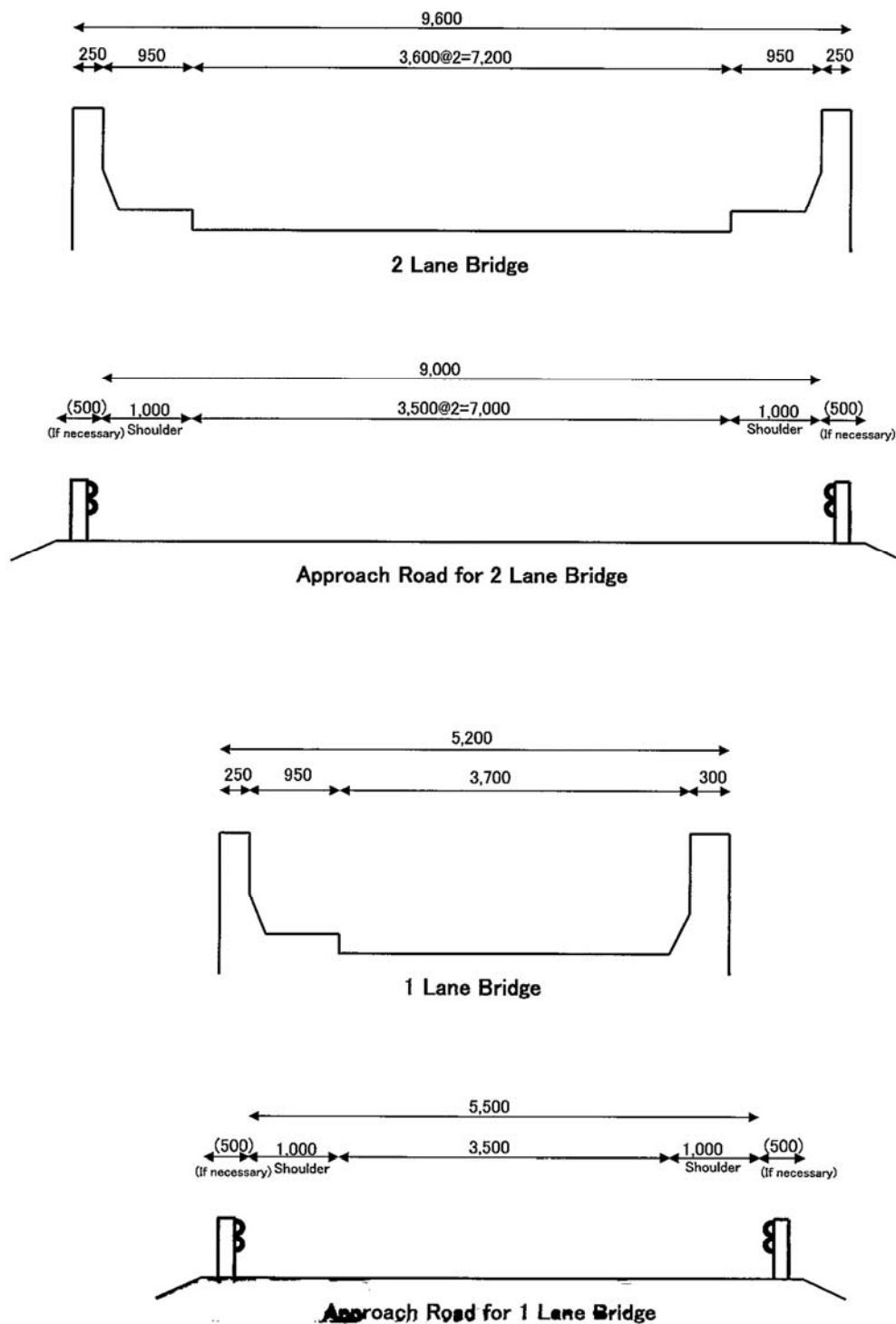


Type-C (No.2, No.4)



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Figure-2 Proposed Bridge Width (Tentative)



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Table- 2 Proposed Bridge Plan (Tentative)

Bridge Name		Existing Bridge		Proposed Plan					
		Length	Width	Type	Length	Span	Width	Lane	
No.1	Mutabasse	95.0	5.1	Prestressed Concrete	105	35+35+35=105	3	9.6	2
No.2	Muliquela	66.0	5.1	Prestressed Concrete	70	35+35=70	2	5.2	1
No.3	Matacasse	15.0	4.2	Reinforced Concrete	15	15	1	9.6	2
No.4	Lua	37.0	5.1	Prestressed Concrete	35	35	1	5.2	1
No.5	Ualasse	15.0	4.2	Reinforced Concrete	15	15	1	9.6	2
No.6	Licungo	35.0	5.2	Prestressed Concrete	35	35	1	9.6	2
No.7	Nivaco	6.2	7.1	Reinforced Concrete	15	15	1	9.6	2
No.8	Matsitse	15.0	4.2	Reinforced Concrete	30	15+15=30	1	9.6	2
No.9	Namisagua	18.0	4.2	Reinforced Concrete	30	15+15=30	2	9.6	2
No.10	Nuhusse	24.0	4.2	Reinforced Concrete	30	15+15=30	2	9.6	2
No.11	Lurio	55.0	3.8	Prestressed Concrete	70	35+35=70	3	9.6	2
No.12	Muassi	10.0	5.2	Reinforced Concrete	15	15	1	9.6	2
No.13	Namutimbua	20.0	4.2	Reinforced Concrete	30	15+15=30	2	9.6	2

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6.2 Memorandum of Agreement at 2nd Site Survey (02/Nov/2011)

**Memorandum of Agreement
between
Outline Design Study Team and National Road Administration (ANE)
on
the Project for the Construction of Bridges between Ile and Cuamba**

Both Parties agreed the following items based on the discussion on 1st November 2011.

- (1) ANE requests to change the abnormal live load NB24 to NB36 for designing bridges on the road. Incidentally, the carriage way width of the one-lane bridge shall be changed to 3.75 meter from 3.6 meter as shown in the following figure.

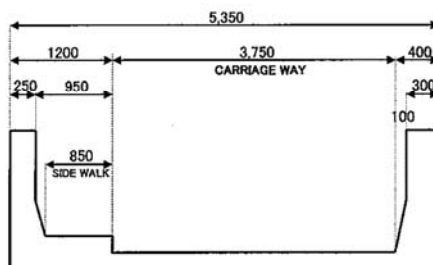


Figure 1. Typical cross section of one-lane bridge (Adjusted to NB load)

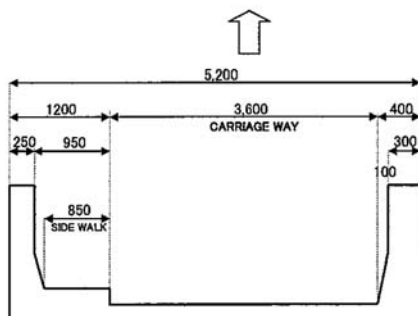


Figure 2. Typical cross section of one-lane bridge (Agreed at the previous meeting for signing technical memorandum on 19th Apr, 2011)

- (2) ANE requests that the bridge name plates installed on the concrete handrails should be made from granite, marble or concrete.

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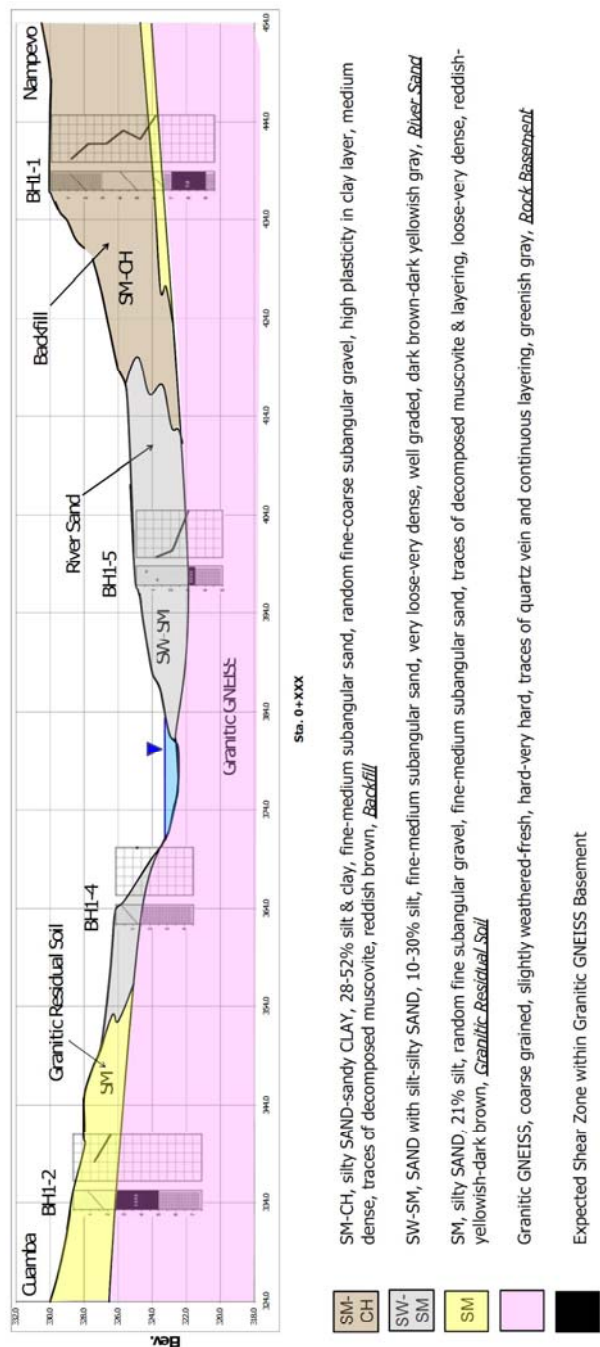
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National Road Administration
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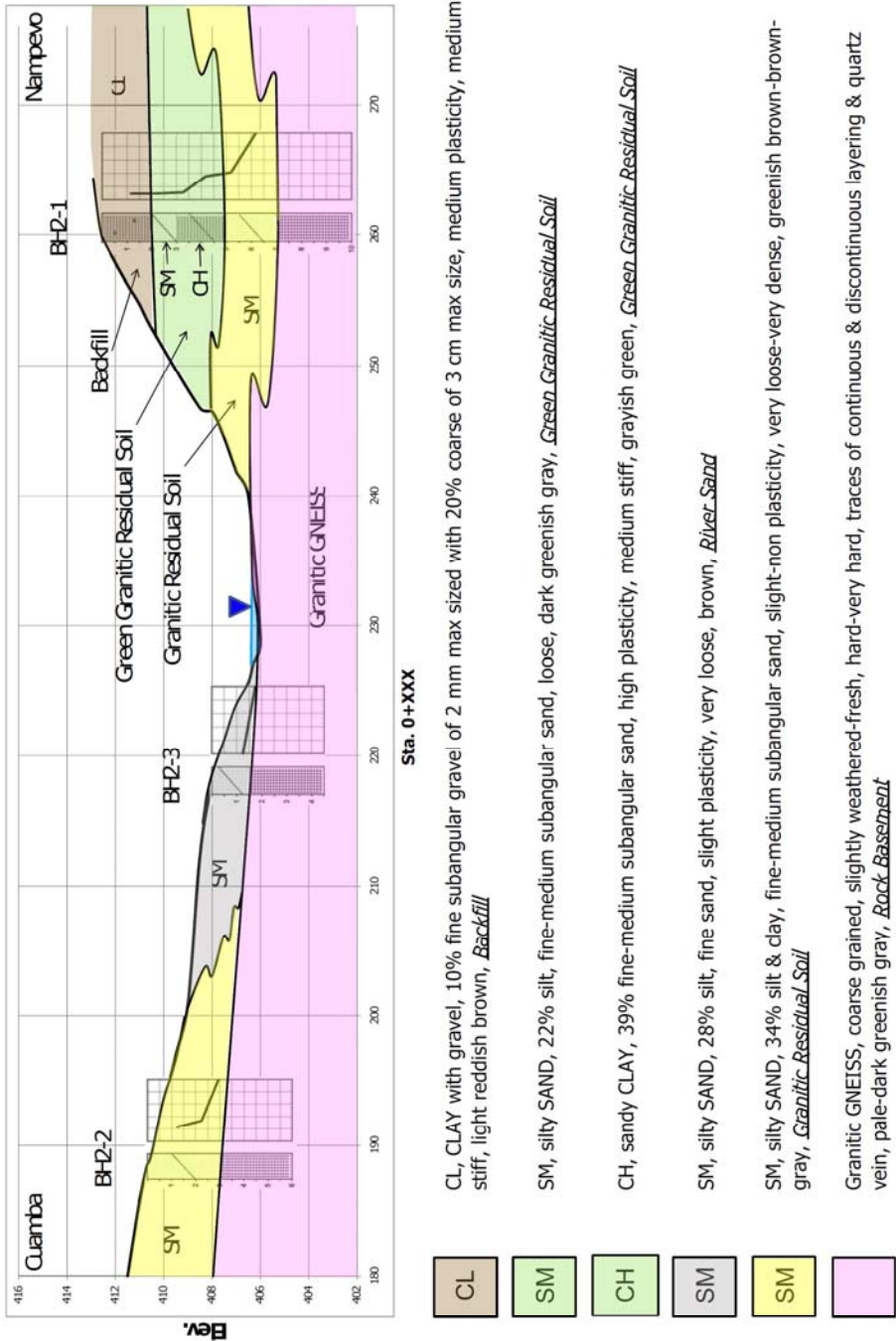
6.3 Geological Survey Result

6.3.1 Geological Profile

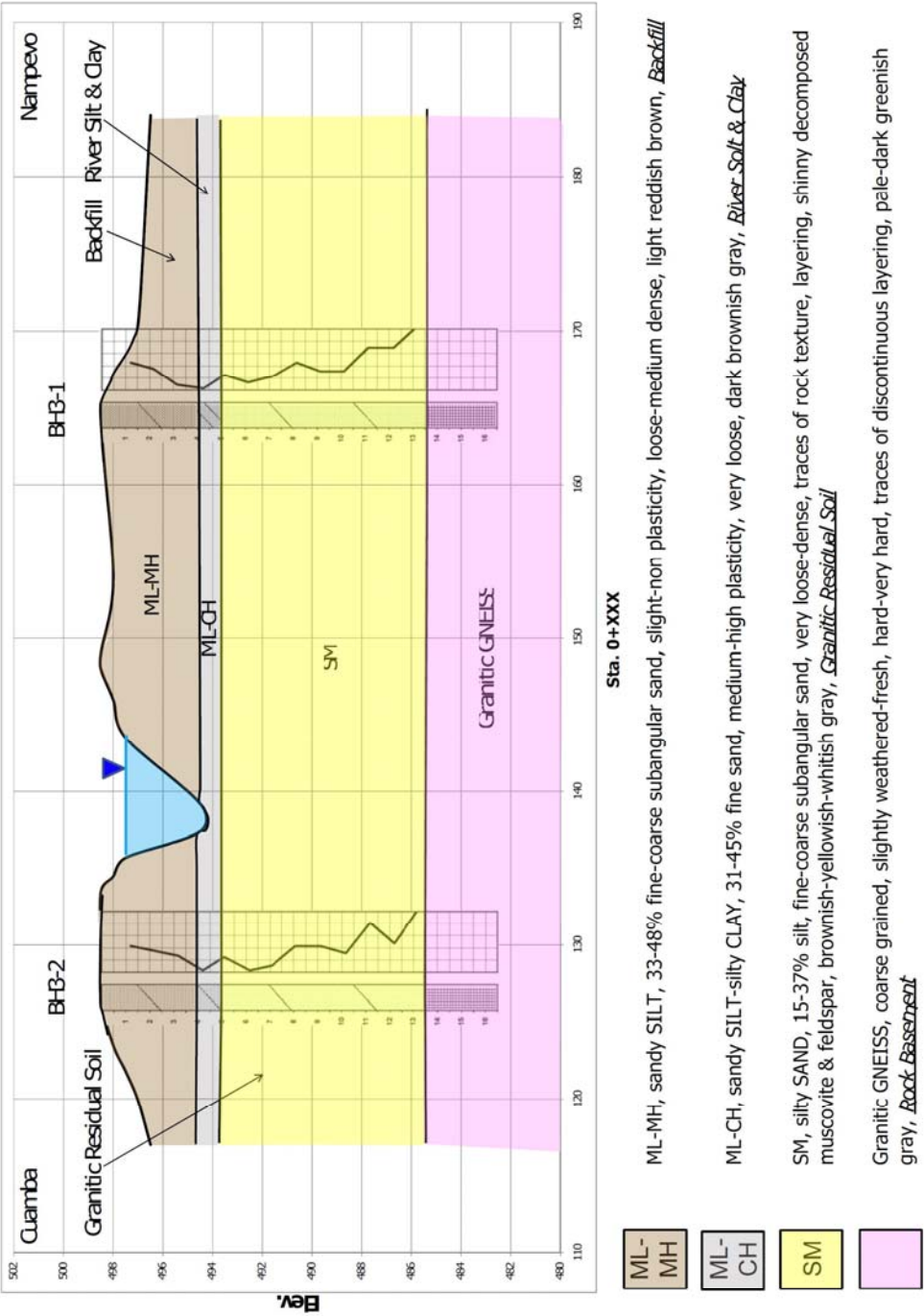
No.1 Mutabasse



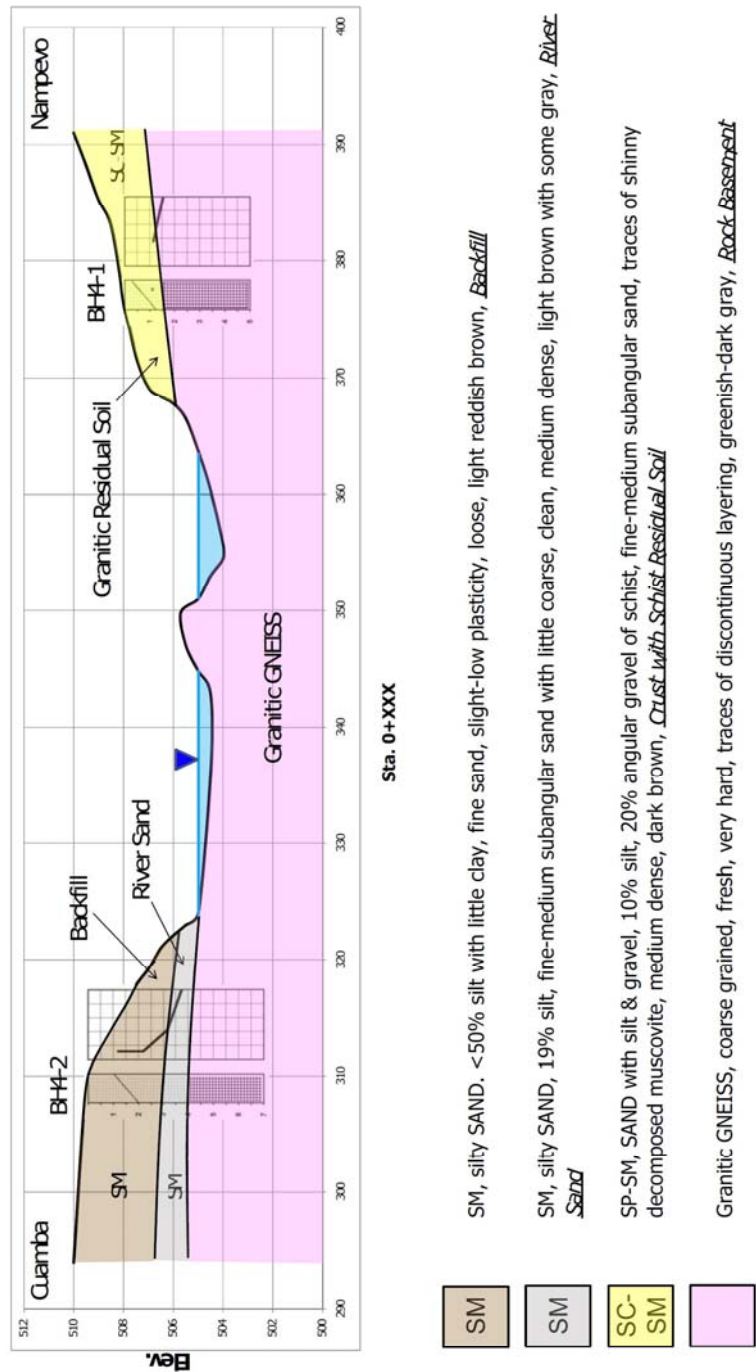
No.2 Muliquela



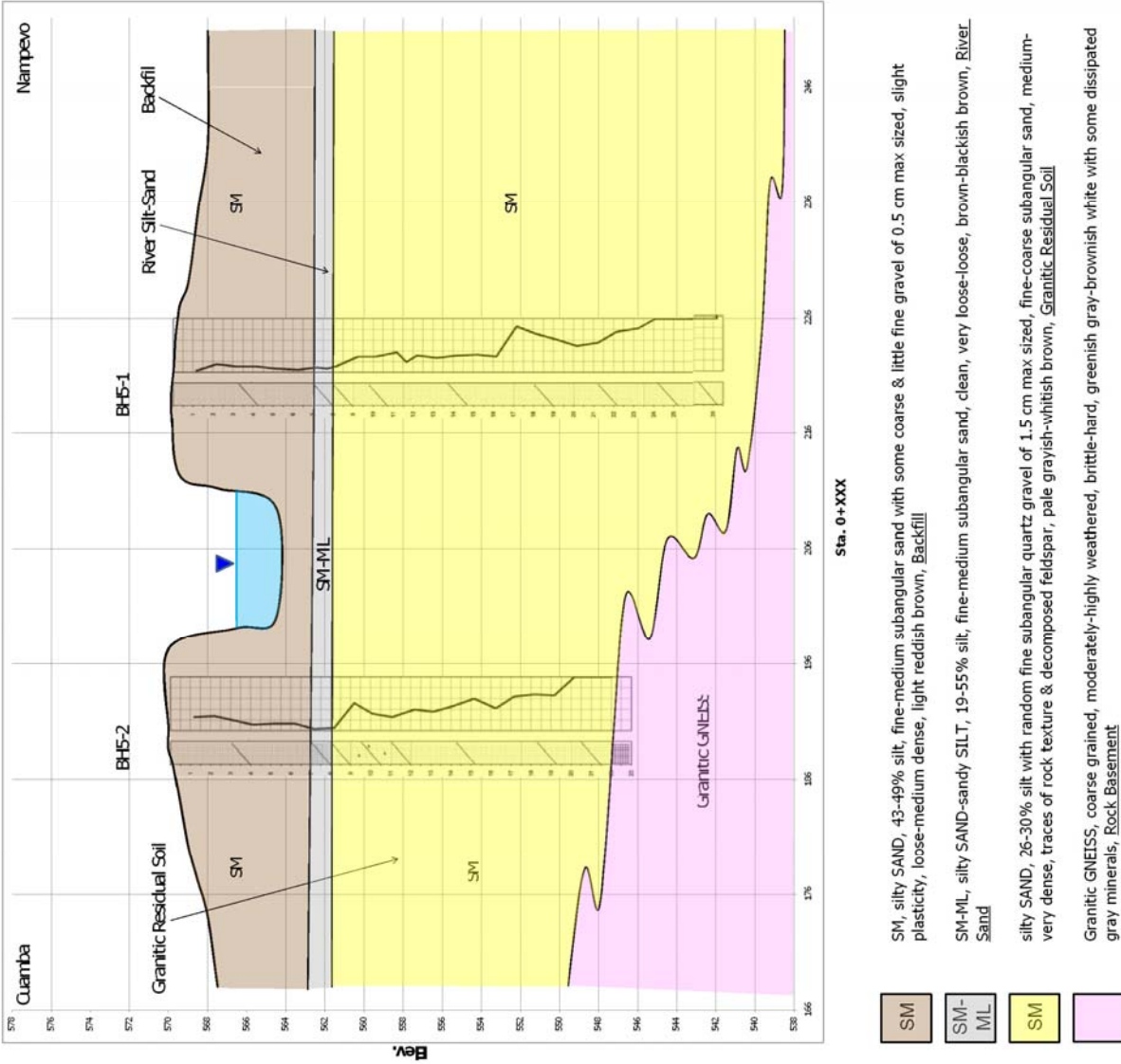
No.3 Matacasse



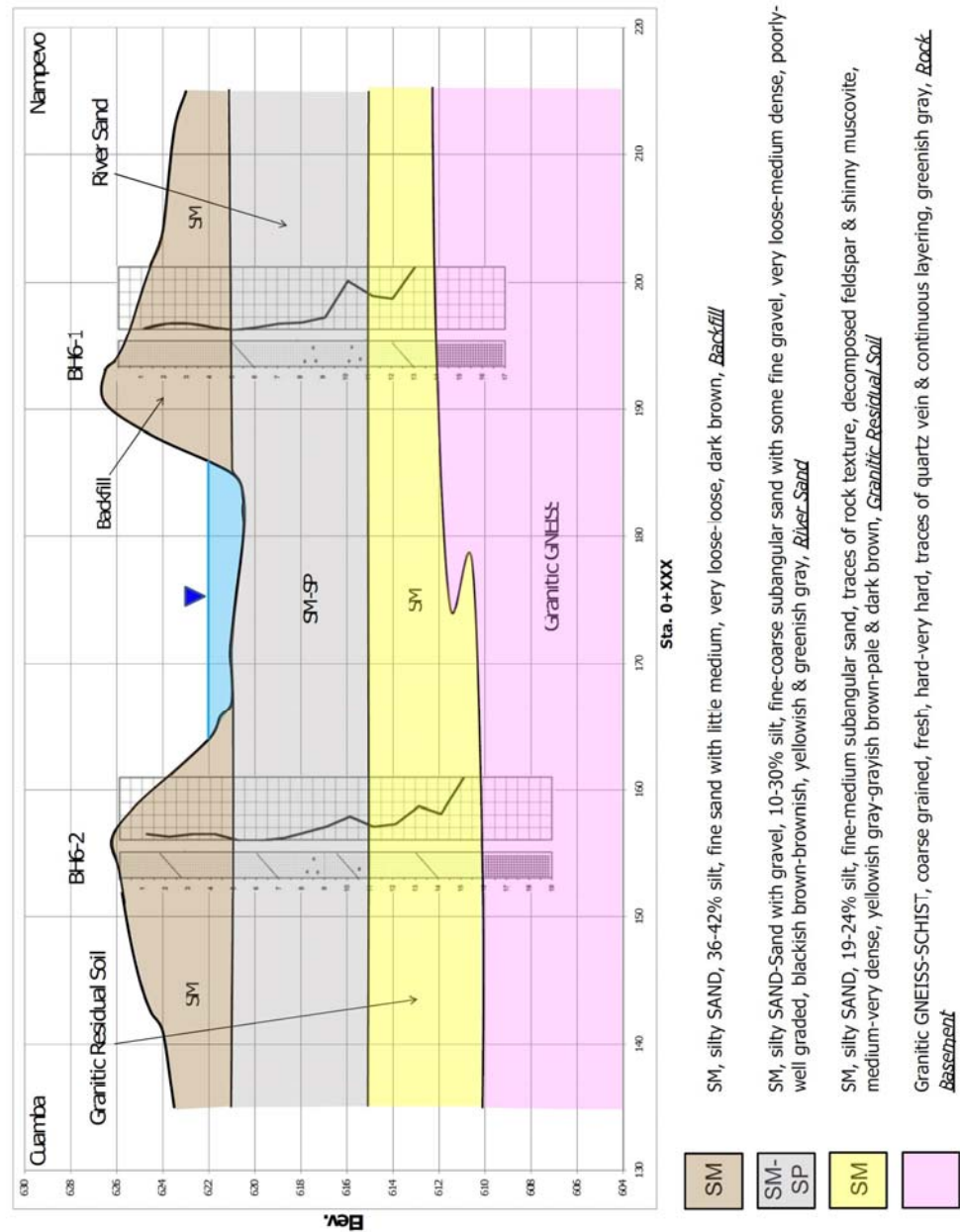
No.4 Lua



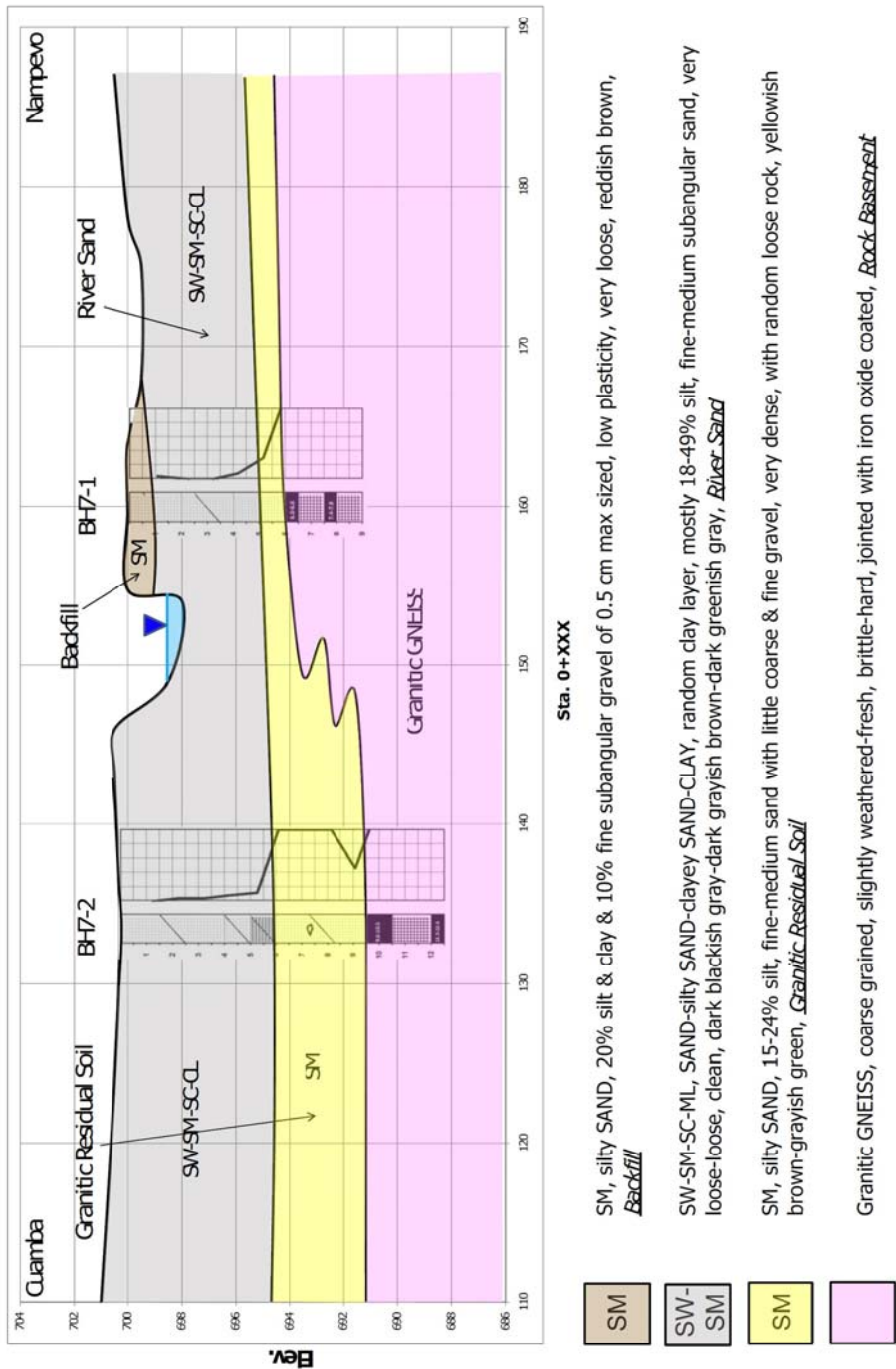
No.5 Ualasse



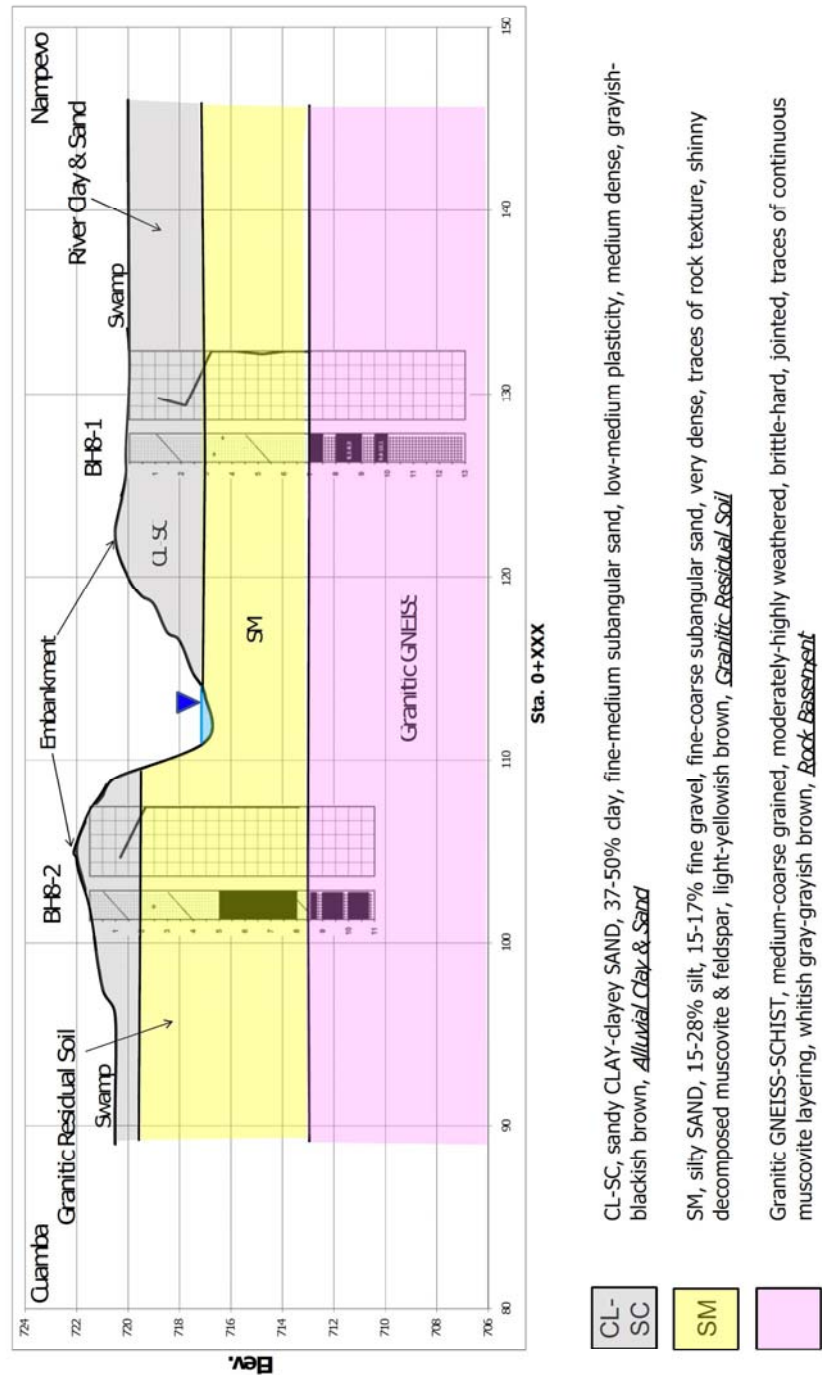
No.6 Licungo



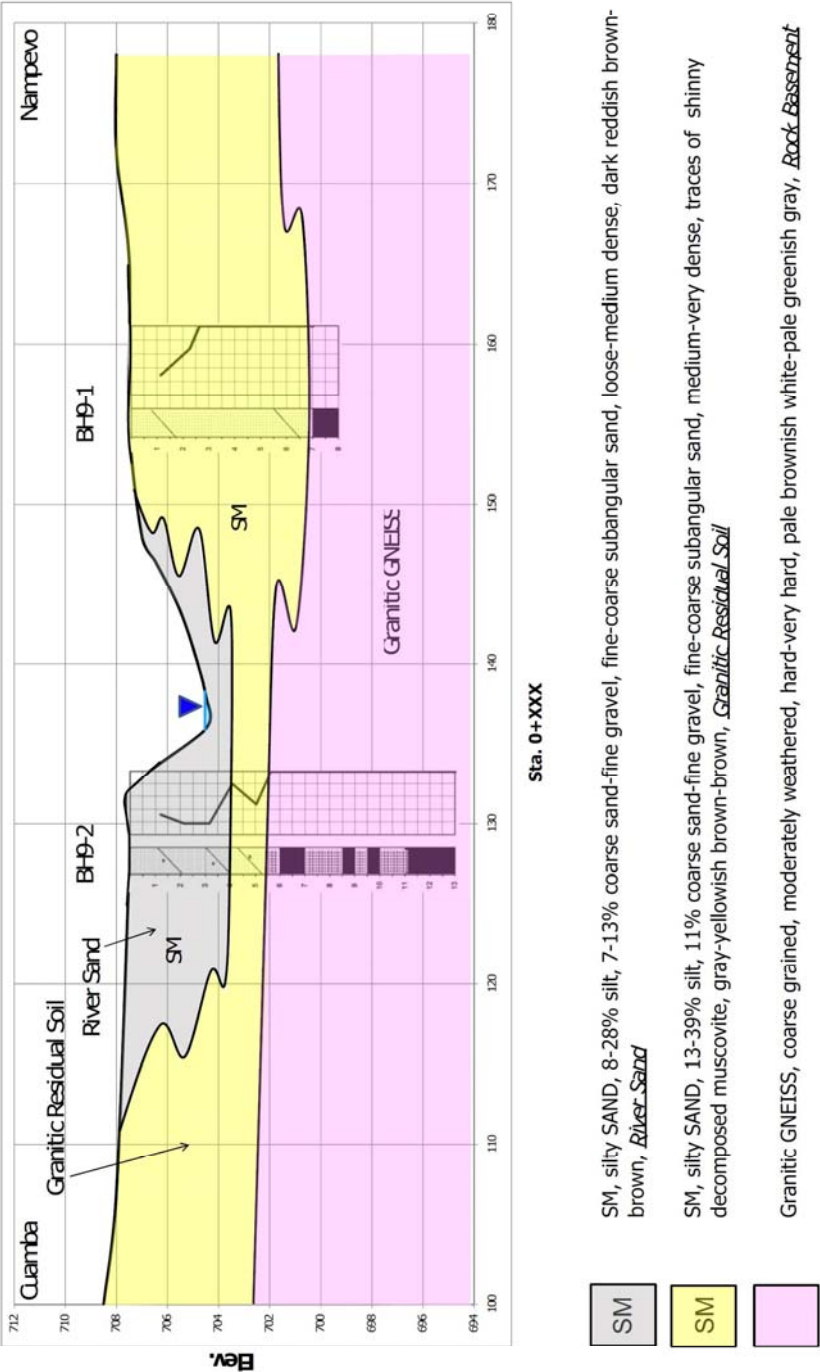
No.7 Nivaco



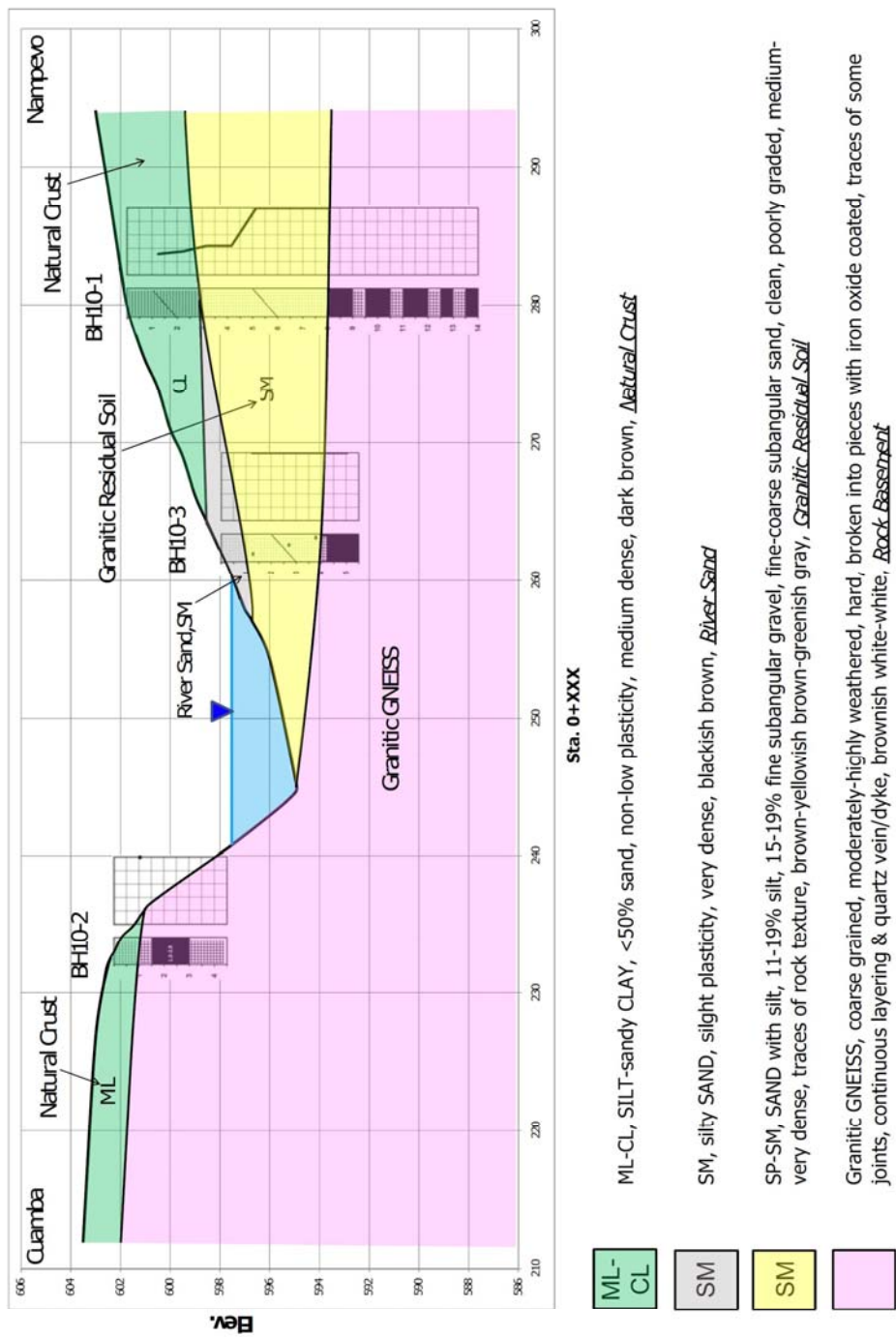
No.8 Matsitse



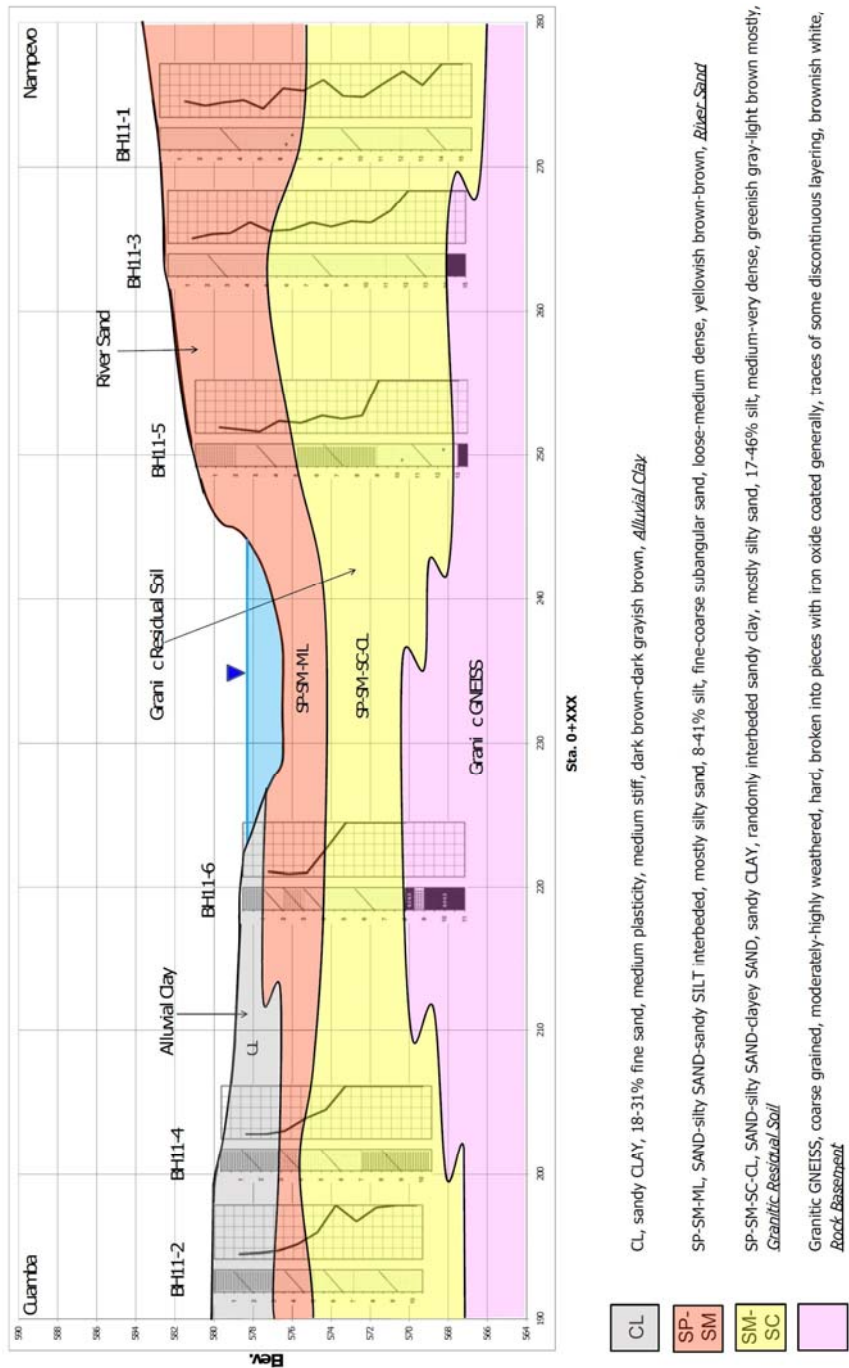
No.9 Namisagua



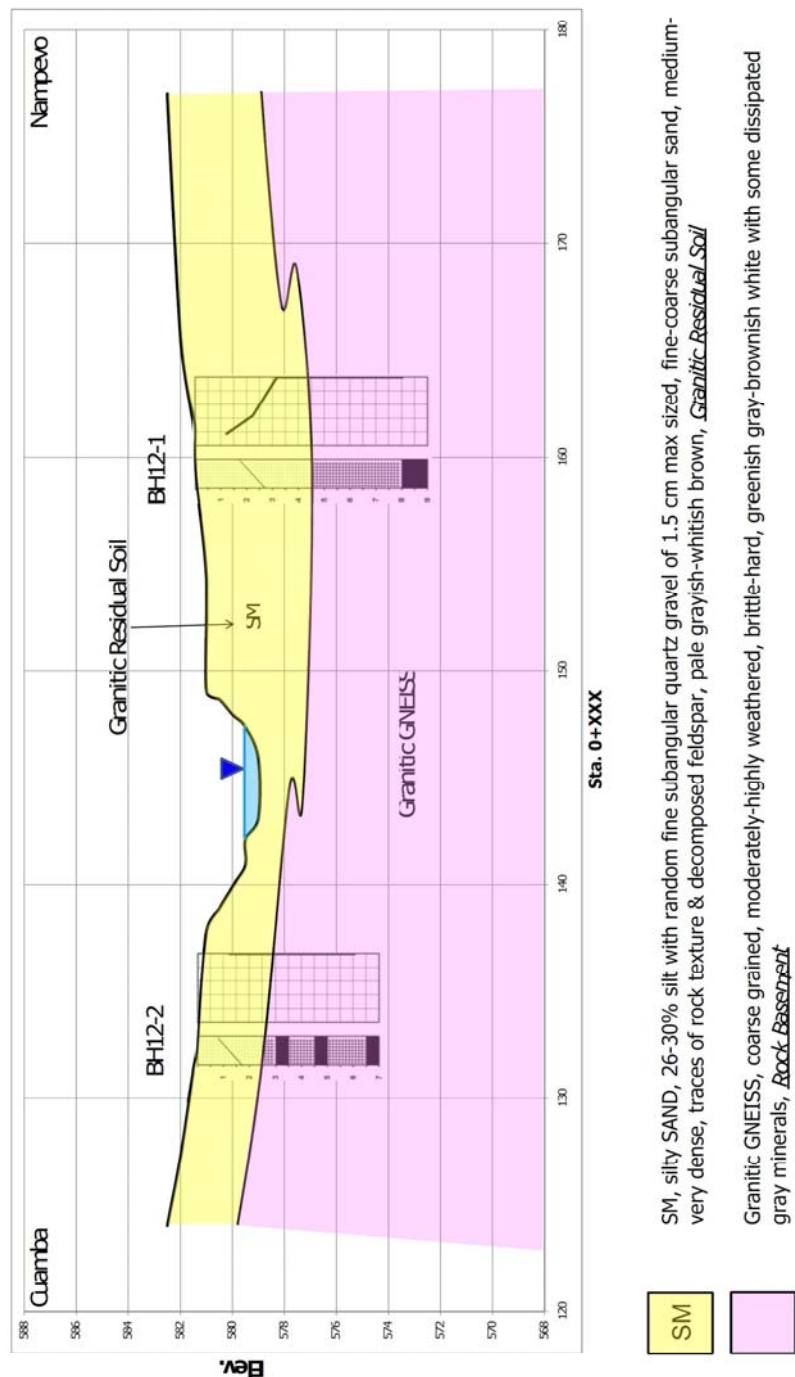
No.10 Nuhusse



No.11 Lurio



No.12 Muassi



No.13 Namutinbua

