6．その他の資料・情報

6.1 第 1 次現地調査時（2011 年 4 月 19 日）

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)

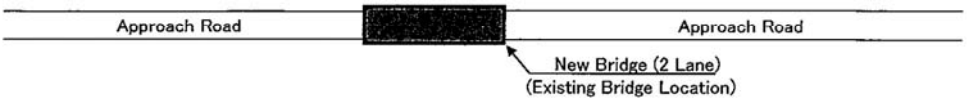
2. Design Load
   - Dead Load
     Dead load specified by SATCC shall be applied.
   - Live Load
     NA, NB, NC live load specified by SATCC shall be applied.
   - Other Load
     Other load including seismic coefficient, wind shall be in accordance with ANE's Bridge Design Manual.

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.

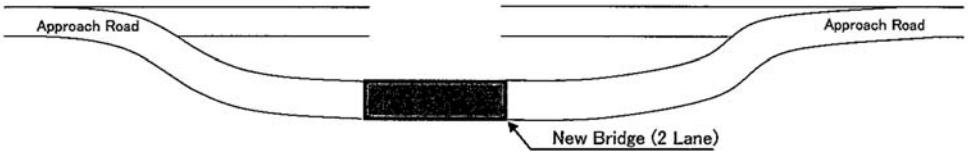
Mr. Junji Yasui	Mr. Ismael Sulemane
Chief Consultant	Director of Projects
JICA Preparatory Survey Team	National Road Administration
(Outline Design Study)	The Republic of Mozambique

Figure-1 Proposed Bridge Location (Tentative)

Type-A (No.3, No.5, No.6, No.7, No.8, No.9, No.10)



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



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

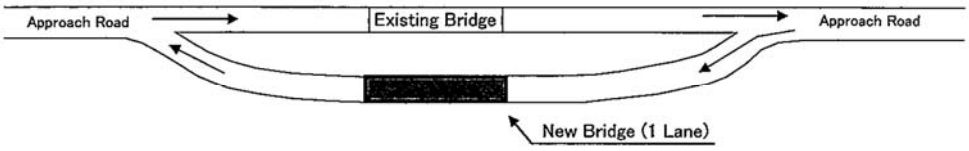


Figure-2 Proposed Bridge Width (Tentative)

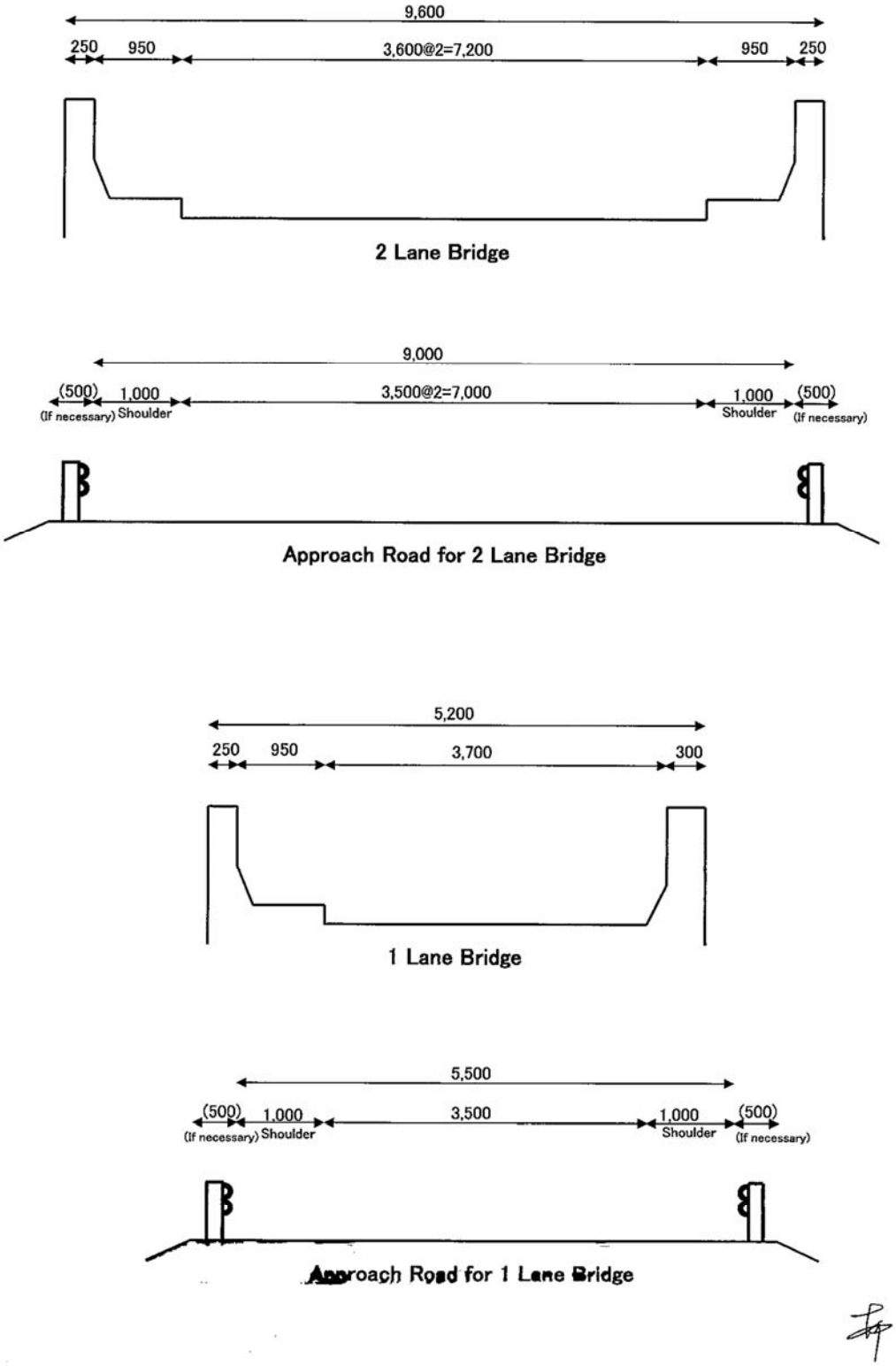


Table- 2 Proposed Bridge Plan (Tentative)

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

6.2 第 2 次現地調査時（2011 年 11 月 2 日）

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.

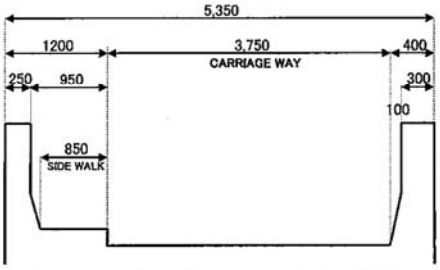


Figure 1. Typical cross section of one-lane bridge (Adjusted to NB load)

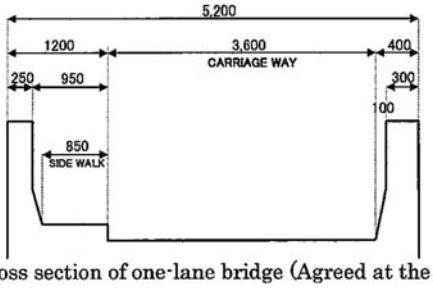


Figure 2. Typical cross section of one-lane bridge (Agreed at the previous meeting for signing technical memorandum on 19th Apr, 2011)

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

Mr. Junji Yasui	Mr. Ismael Sulemane
Chief Consultant	Director of Projects
JICA Preparatory Survey Team	National Road Administration
(Outline Design Study)	The Republic of Mozambique

6.3 地質調査結果

6.3.1 概要

地質調査は現地再委託により実施し、橋梁基礎形式の検討、支持層の検討に必要な地質・地層状況を把握するためにボーリング掘削、標準貫入試験、土質資料採取及び室内試験を行なった。これらの試験により基本設計に必要となる地質縦断図、土質柱状図、室内試験結果が収集された。以下に地質調査結果を整理する。

表 6.3　地質調査内容

種類	調査内容・数量	
ボーリング調査	ボーリング本数	地上部　２９本
		河川部　　８本
		合　計　３７本
	標準貫入試験	全ボーリング位置で実施
	サンプリング	乱した試料および不攪乱試料
		岩のコア採取
室内試験	物理試験	密度試験
		含水比試験
		粒度試験
		液性限界・塑性限界試験
	せん断試験	一軸圧縮試験（岩および粘性土）

写真 6.3.1　地質調査状況(BH3-1)

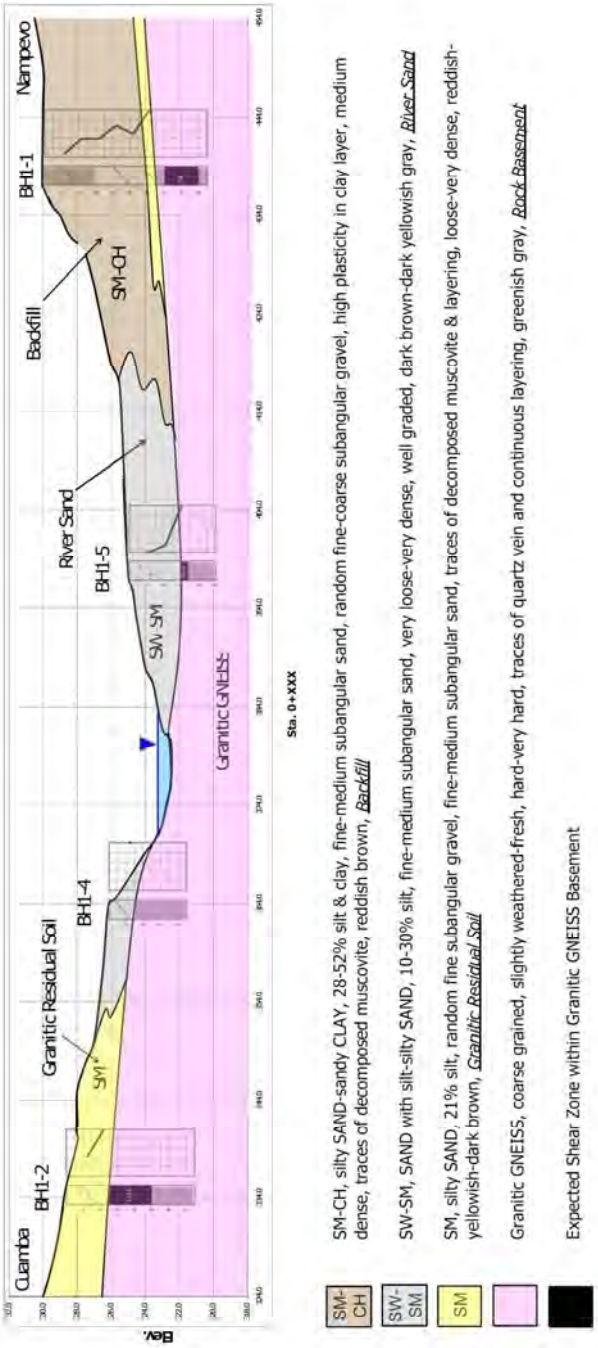
写真 6.3.2　採取資料(BH3-1)

写真 6.3.3　地質調査状況(BH6-1)

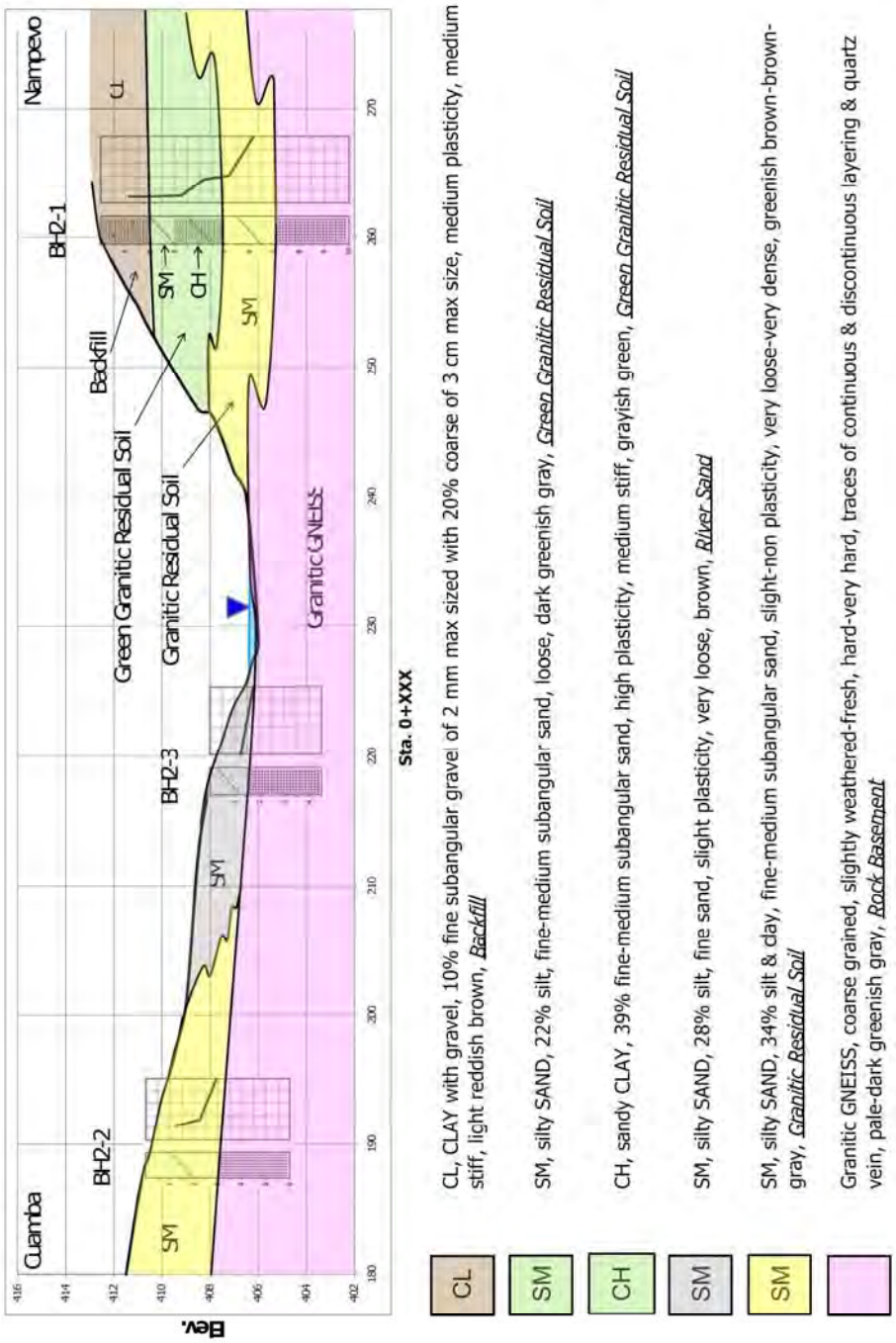
写真 6.3.4　採取資料(BH6-1)

6.3.2 想定地質縦断図

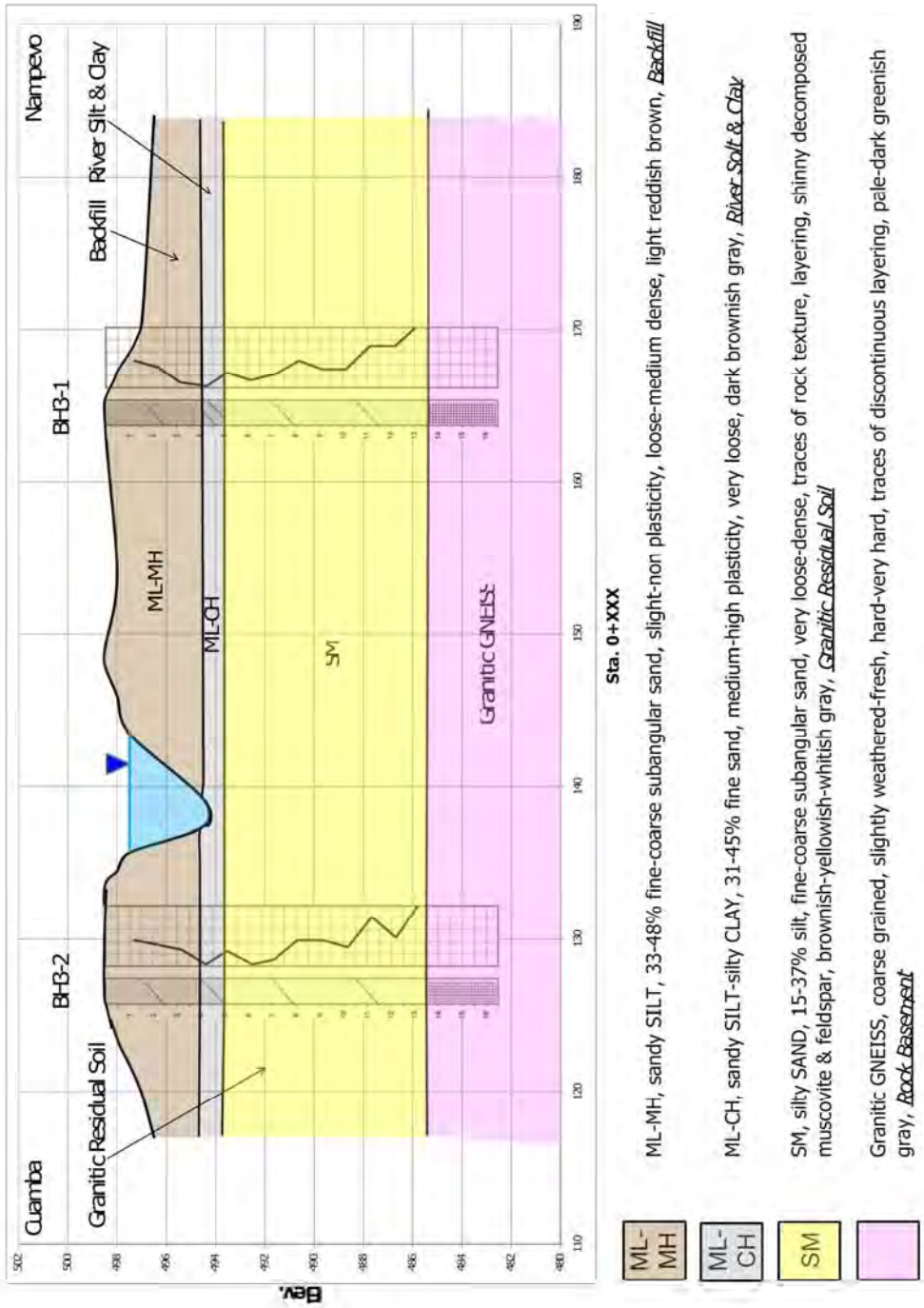
No.1 Mutabasse



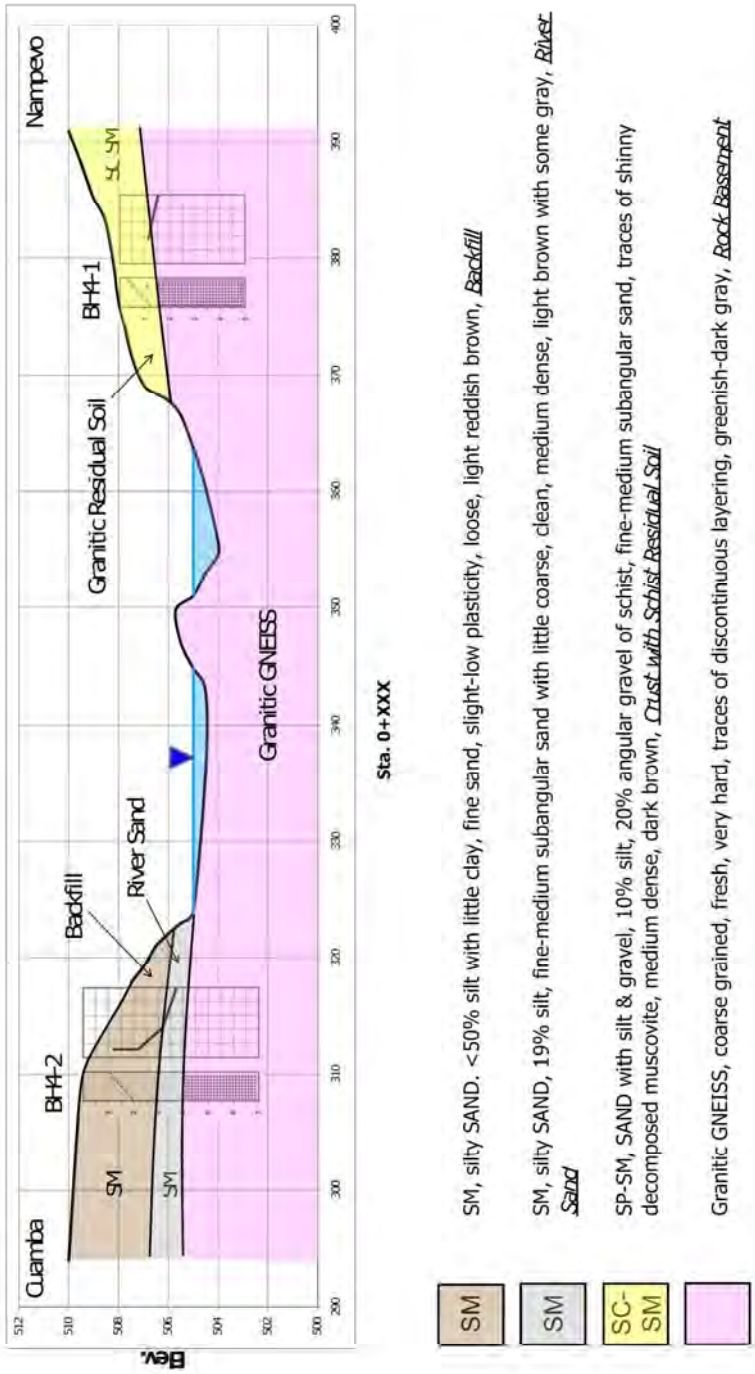
No.2 Muliquela



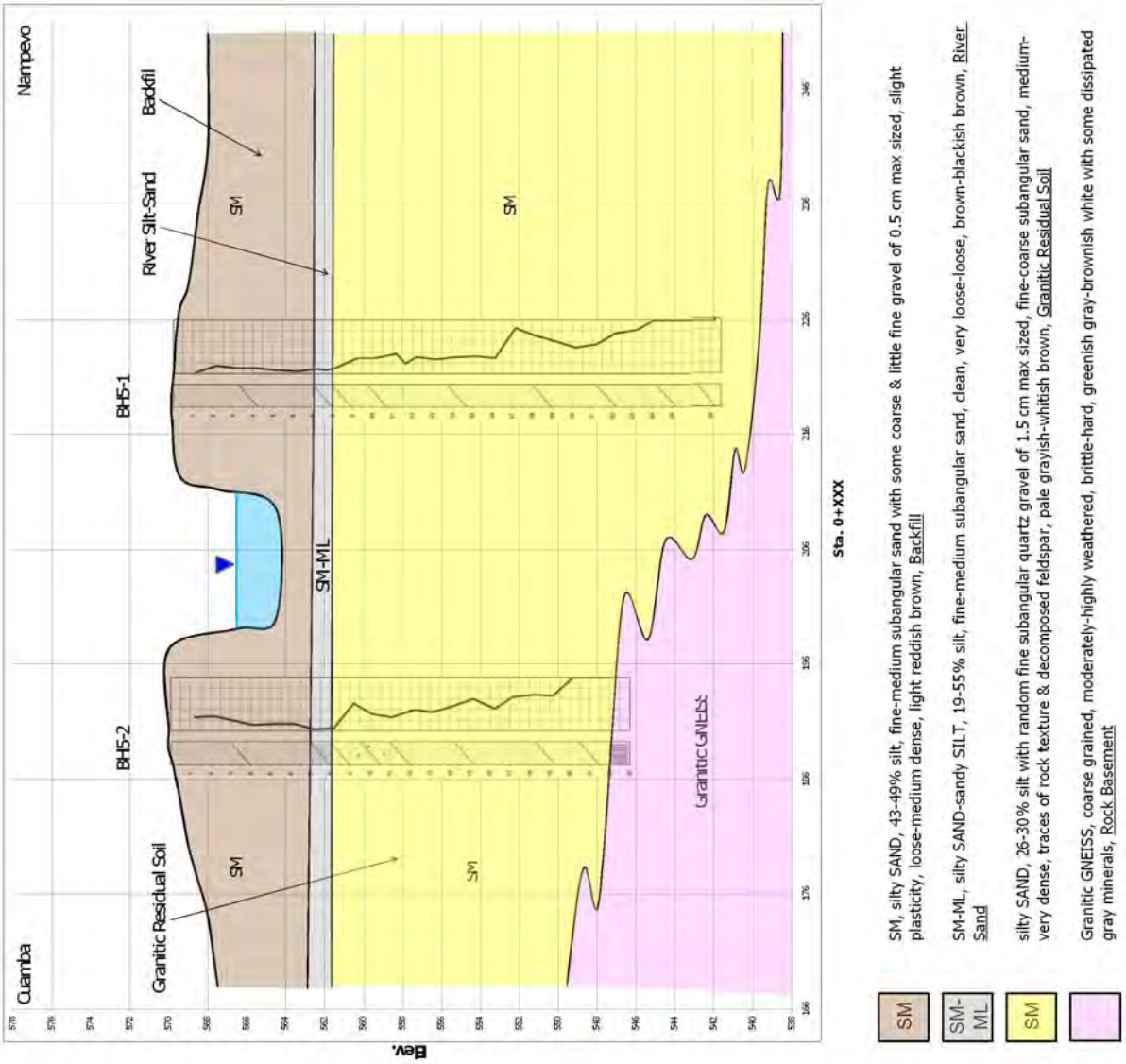
No.3 Matacasse



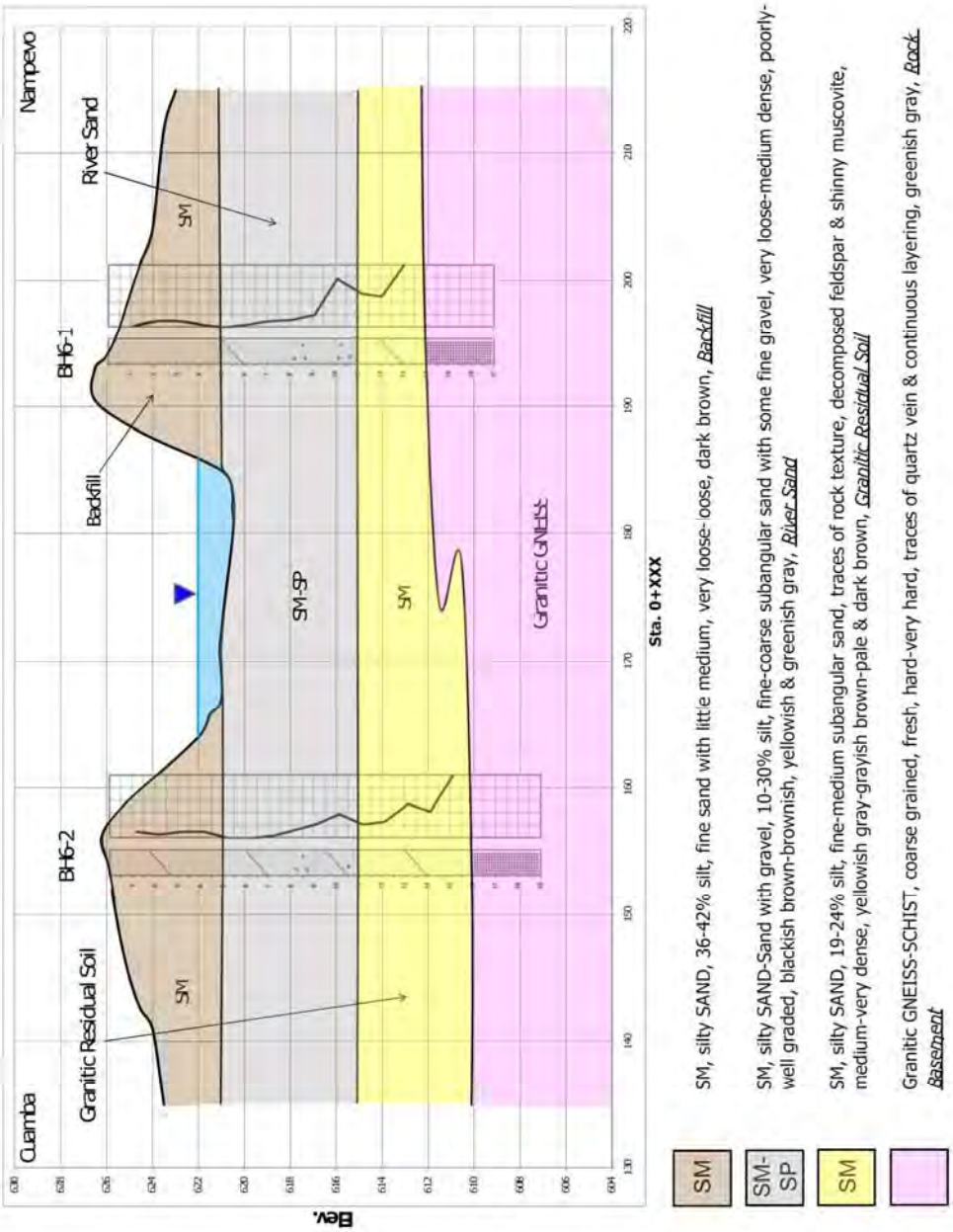
No.4 Lua


Nampevo
Cuamba
BH-1
BH-2
Granitic Residual Soil
Backfill
River Sand
Granitic GNEISS
SC, SM
SM
SM
Elev.
512
510
508
506
504
502
500
200
300
310
320
330
340
350
360
370
380
390
400
Sta. 0+XXX
SM, silty SAND. <50% silt with little clay, fine sand, slight-low plasticity, loose, light reddish brown, Backfill
SM, silty SAND, 19% silt, fine-medium subangular sand with little coarse, clean, medium dense, light brown with some gray, River Sand
SP-SM, SAND with silt & gravel, 10% silt, 20% angular gravel of schist, fine-medium subangular sand, traces of shinny decomposed muscovite, medium dense, dark brown, Crust with Schist Residual Soil
Granitic GNEISS, coarse grained, fresh, very hard, traces of discontinuous layering, greenish-dark gray, Rock Basement
SM
SM
SC-SM

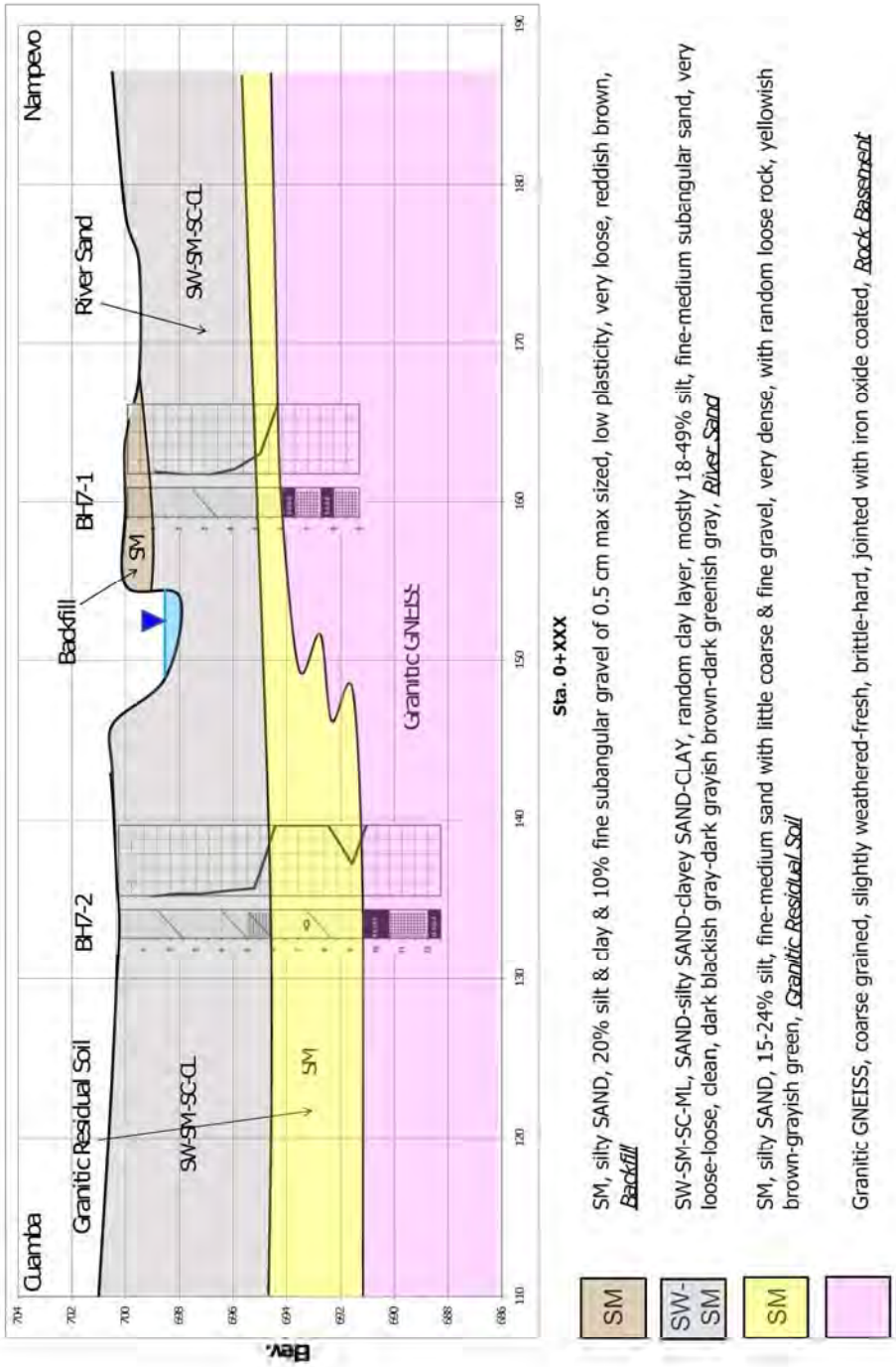
No.5 Ualasse


Cuamba
Nampevo
Granitic Residual Soil
BH5-2
BH5-1
River Silt-Sand
Backfil
SM
SM-ML
Granitic GNEISS
Elev.
Sta. 0+XXX
SM, silty SAND, 43-49% silt, fine-medium subangular sand with some coarse & little fine gravel of 0.5 cm max sized, slight plasticity, loose-medium dense, light reddish brown, Backfill
SM-ML, silty SAND-sandy SILT, 19-55% silt, fine-medium subangular sand, clean, very loose-loose, brown-blackish brown, River Sand
silty SAND, 26-30% silt with random fine subangular quartz gravel of 1.5 cm max sized, fine-coarse subangular sand, medium-very dense, traces of rock texture & decomposed feldspar, pale grayish-whitish brown, Granitic Residual Soil
Granitic GNEISS, coarse grained, moderately-highly weathered, brittle-hard, greenish gray-brownish white with some dissipated gray minerals, Rock Basement

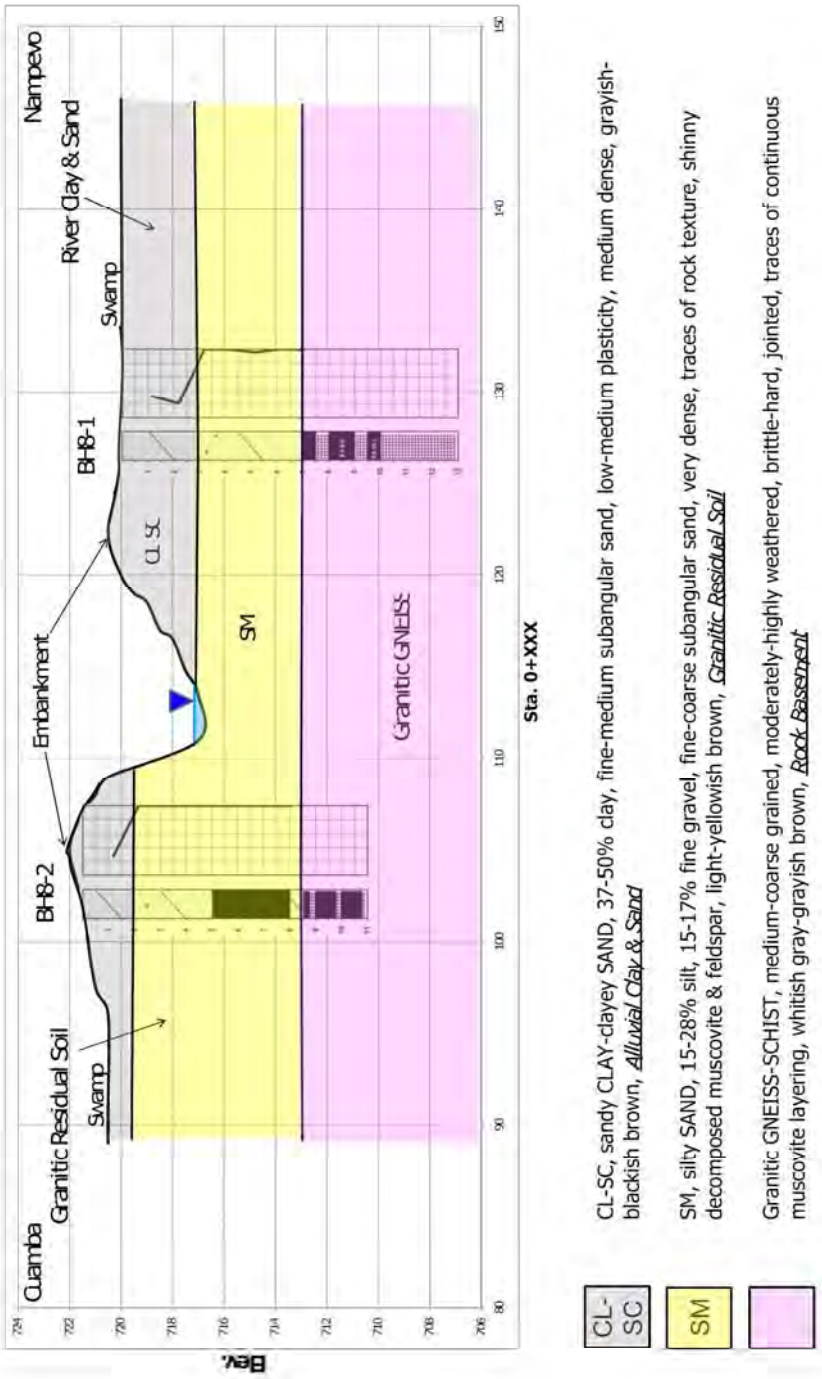
No.6 Licungo


Cuamba
Nampevo
Granitic Residual Soil
BH6-2
BH6-1
Backfill
River Sand
SM
SM-SP
SM
SM
Granitic GNEISS
Elev.
Sta. 0+XXX
SM, silty SAND, 36-42% silt, fine sand with little medium, very loose-loose, dark brown, Backfill
SM, silty SAND-Sand with gravel, 10-30% silt, fine-coarse subangular sand with some fine gravel, very loose-medium dense, poorly-well graded, blackish brown-brownish, yellowish & greenish gray, River Sand
SM, silty SAND, 19-24% silt, fine-medium subangular sand, traces of rock texture, decomposed feldspar & shinny muscovite, medium-very dense, yellowish gray-grayish brown-pale & dark brown, Granitic Residual Soil
Granitic GNEISS-SCHIST, coarse grained, fresh, hard-very hard, traces of quartz vein & continuous layering, greenish gray, Rock Basement

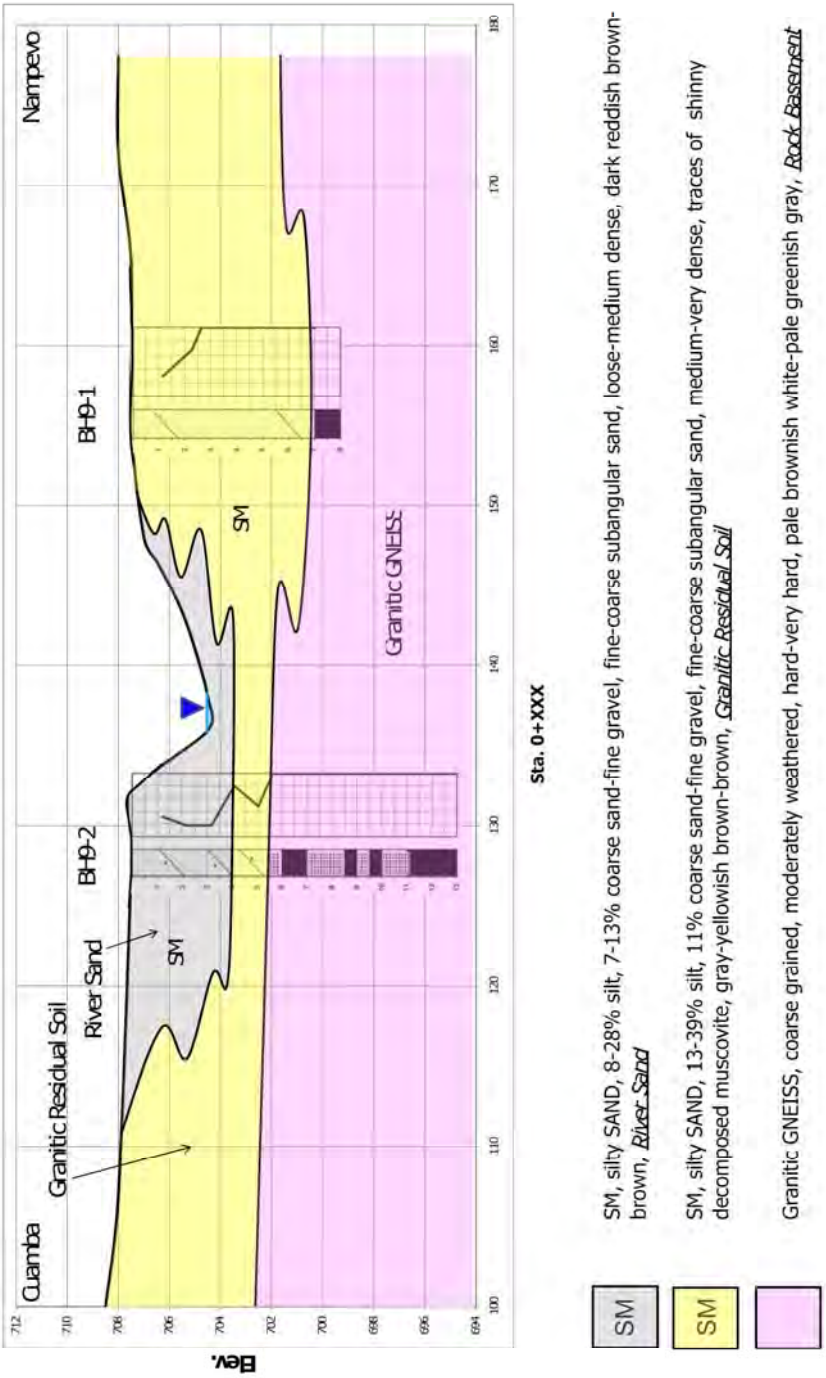
No.7 Nivaco


Cuamba
Nampevo
Granitic Residual Soil
BH7-2
Backfill
BH7-1
River Sand
SW-SM-SC-CL
SM
Granitic GNEISS
Elev.
Sta. 0+XXX
SM, silty SAND, 20% silt & clay & 10% fine subangular gravel of 0.5 cm max sized, low plasticity, very loose, reddish brown, Backfill
SW-SM-SC-ML, SAND-silty SAND-clayey SAND-CLAY, random clay layer, mostly 18-49% silt, fine-medium subangular sand, very loose-loose, clean, dark blackish gray-dark grayish brown-dark greenish gray, River Sand
SM, silty SAND, 15-24% silt, fine-medium sand with little coarse & fine gravel, very dense, with random loose rock, yellowish brown-grayish green, Granitic Residual Soil
Granitic GNEISS, coarse grained, slightly weathered-fresh, brittle-hard, jointed with iron oxide coated, Rock Basement

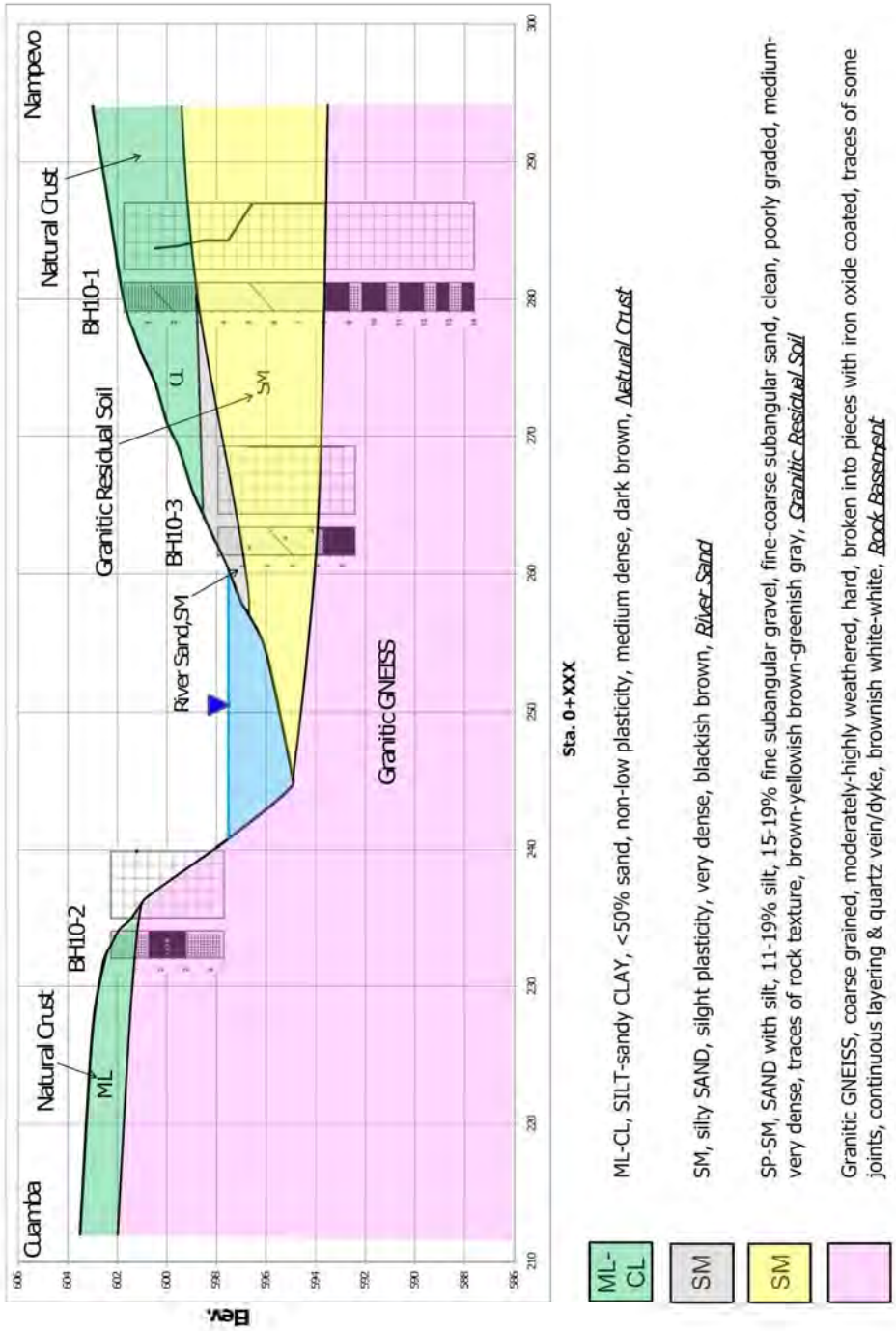
No.8 Matsitse



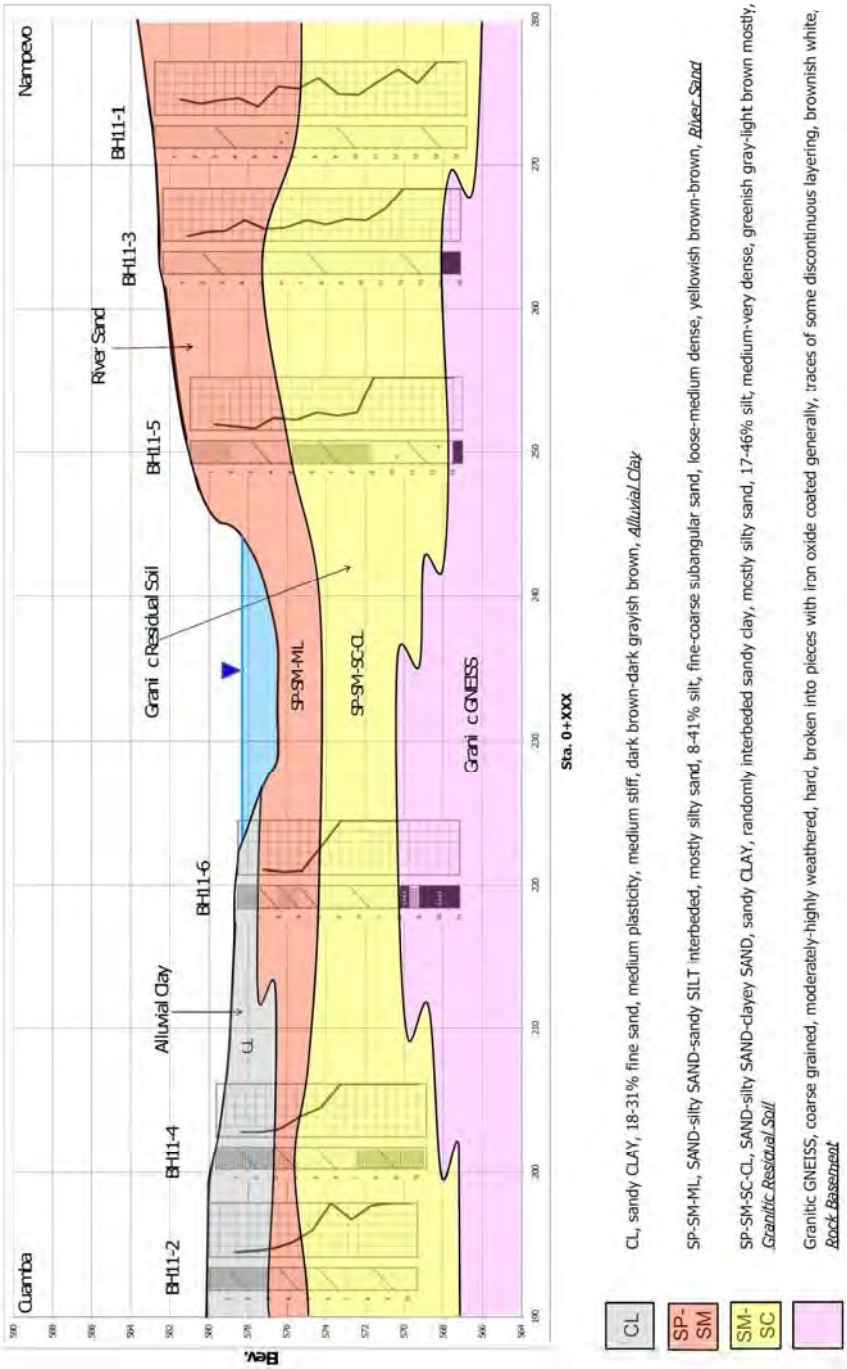
No.9 Namisagua



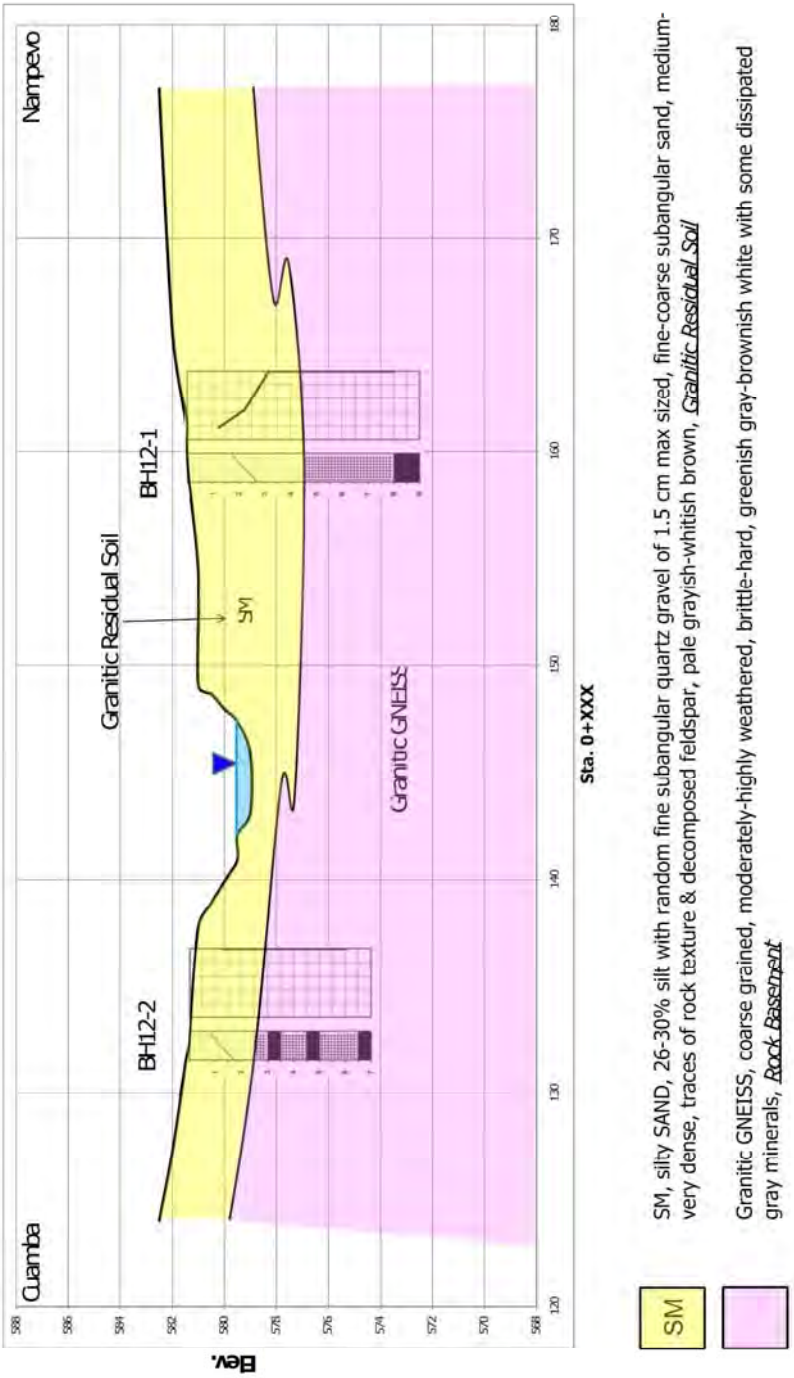
No.10 Nuhusse



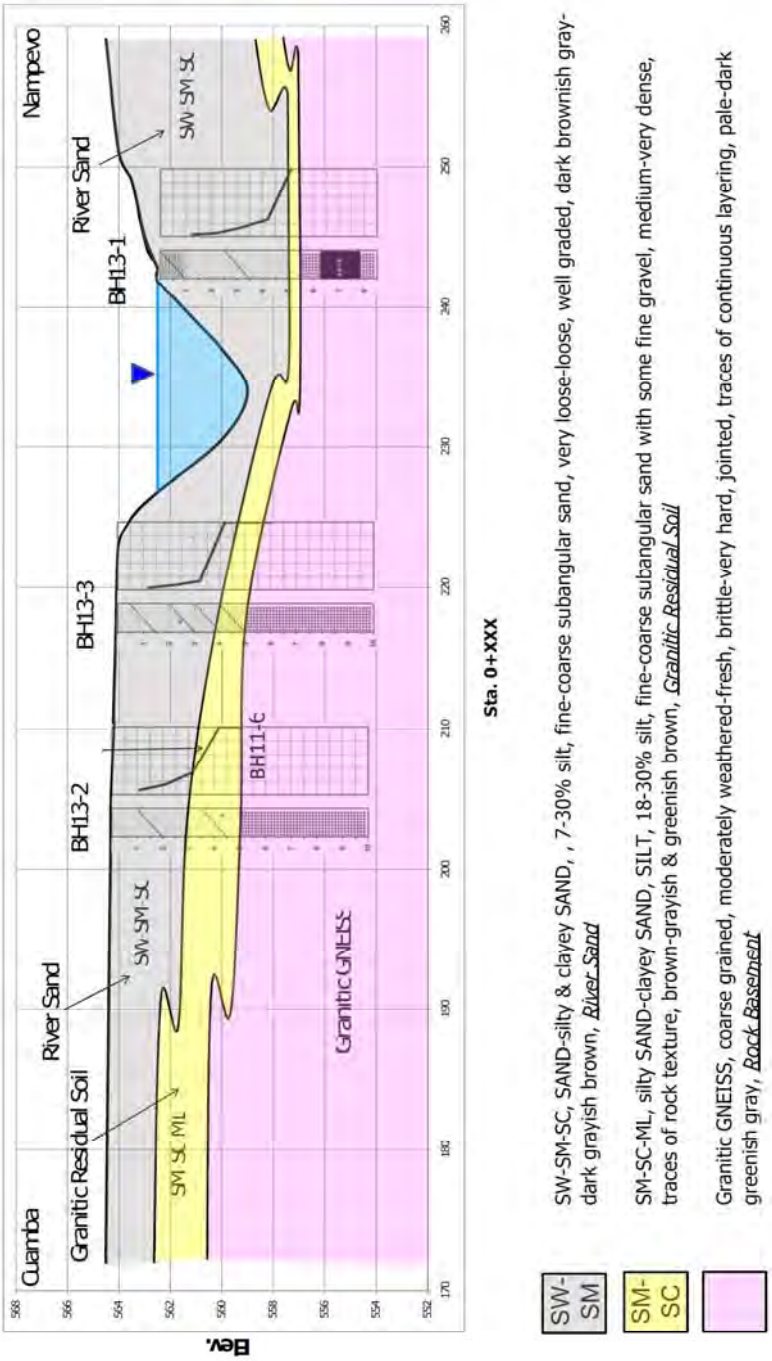
No.11 Lurio


Nampevo
Cuamba
River Sand
Alluvial Clay
Granitic Residual Soil
BH11-1
BH11-2
BH11-3
BH11-4
BH11-5
BH11-6
SP-SM-ML
SP-SM-SC-CL
Granitic GNEISS
Sta. 0+XXX
Elev.
CL, sandy CLAY, 18-31% fine sand, medium plasticity, medium stiff, dark brown-dark grayish brown, Alluvial Clay
SP-SM-ML, SAND-silty SAND-sandy SILT interbeded, mostly silty sand, 8-41% silt, fine-coarse subangular sand, loose-medium dense, yellowish brown-brown, River Sand
SP-SM-SC-CL, SAND-silty SAND-clayey SAND, sandy CLAY, randomly interbeded sandy clay, mostly silty sand, 17-46% silt, medium-very dense, greenish gray-light brown mostly, Granitic Residual Soil
Granitic GNEISS, coarse grained, moderately-highly weathered, hard, broken into pieces with iron oxide coated generally, traces of some discontinuous layering, brownish white, Rock Basement
CL
SP-SM
SM-SC

No.12 Muassi


Guamba
Nampevo
Elev.
588
586
584
582
580
578
576
574
572
570
568
120
130
140
150
160
170
180
Sta. 0+XXX
BH12-2
BH12-1
Granitic Residual Soil
SM
Granitic GNEISS
SM
SM, silty SAND, 26-30% silt with random fine subangular quartz gravel of 1.5 cm max sized, fine-coarse subangular sand, medium-very dense, traces of rock texture & decomposed feldspar, pale grayish-whitish brown, Granitic Residual Soil
Granitic GNEISS, coarse grained, moderately-highly weathered, brittle-hard, greenish gray-brownish white with some dissipated gray minerals, Rock Basement

No.13 Namutinbua



6.3.3 ボーリング柱状図

BKS Global Mozambique Lda — **BORING LOG** — BOREHOLE: BH1-1 — SHEET 1 OF 1

PROJECT:	Soil Test for Ile-Cuamba Bridges	Coordinates: S: 8208921.275 E: 301005.297	Water Level: -5.20 m
LOCATION:	S-Abutment of Bridge 1, Mutabassa	Ground Elevation, m-MSL: 331.197 m	Starting Date: 4/5/2011
CLIENT:	Chodai & EJEC	Max.Drilling Depth: 9.40 m	Finishing Date: 5/5/2011

DEPTH (m)	GRAPHIC LOG	SOIL DESCRIPTION	SAMPLING METHOD	SAMPLE NO	RECOVERY (cm)	Total Unit Weight (Ton/m³)	Plastic Limit / Natural Water Content / Liquid Limit (%)	Specific Gravity	SPT Blow Count (Blow/ft)
		0.0-3.0 m, CH, sandy CLAY, 48% fine-medium subangular sand with random fine-coarse subangular gravel of 3 cm max sized, high plasticity, medium stiff-stiff, traces of decomposed muscovite, reddish brown, *Backfill*	WO						
1			WO						
			SS	1	25				4
2			WO						
			SS	2	25	1.9	21	2.7	20
3			WO						
		3.0-6.0 m, SM, silty SAND, 28% silt, fine-medium subangular sand, medium-dense, some traces of decomposed muscovite, reddish brown. *Backfill*	SS	3	32		7	2.7	20
4			WO						
			SS	4	31				34
5			WO						
			SS	5	30				25
6			WO				11		
		6.0-6.4 m. SM, silty SAND, *Granitic Residual Soil*	SS	6	15			2.7	50/15
7		6.4-7.0 m, granitic GNEISS, fine grained, moderatly weathered, hard, pale whitish-greenish gray, *Rock Basement*	C1	46	65				
8	7.0-8.9	7.0-8.9 m, expected shear zone within granitic GNEISS basement			0				
9		8.9-9.4 m, granitic GNEISS, coarse grained, fresh, very hard, traces of continuous layering of pale gray quartz vein, greenish gray, *Rock Basement*	C2	15	60				
			C3	87					

End of Borehole @ 9.4 m

Coring: 2nd Col = %Recovery, 3rd Col = %RQD

Loss

Lab, WO - Wash , SS-Split Spoon , C - Coring

BKS Global Mozambique Lda

BORING LOG

BOREHOLE: BH1-2
SHEET: 1 OF 1

PROJECT:	Soil Test for Ile-Cuamba Bridges	Coordinates: S: 8209019.095 E: 300960.382	Water Level: -1.40 m
LOCATION:	N-Abutment of Bridge 1, Mutabasse	Ground Elevation, m-MSL: 328.647 m	Starting Date: 3/5/2011
CLIENT:	Chodai & EJEC	Max.Drilling Depth: 7.60 m	Finishing Date: 3/5/2011

DEPTH (m)	GRAPHIC LOG	SOIL DESCRIPTION	SAMPLING METHOD	SAMPLE NO.	RECOVERY (cm)	Total Unit Weight (Ton/m³) 1.6 1.8 2.0	Plastic Limit / Natural Water Content / Liquid Limit (%) 30 60 90 120	Specific Gravity 2.4 2.6 2.8	SPT Blow Count (Blow/ft) 10 20 30 40
		0.0-2.3m, SM, silty SAND, 21% silt with random fine subangular gravel of 2 cm max sized, fine-medium subangular sand, traces of decomposed muscovite & layering, medium-very dense, striped color of yellowish brown-brown-pale grayish white, *Granitic Residual Soil*	WO						
1			WO						
			SS	1	38	2.0	15	2.8	21
2			WO						
			SS	2	30				50/25
3	2.3-5.0	2.3-5.0 m, expected shear zone within granitic GNEISS basement	C1	Loss					
4			C2	Loss					
			C3	Loss					
			C4	Loss	39				
5		5.0-7.6 m, granitic GNEISS, coarse grained, highly weathered on top 20 cm then fresh throughly & very hard, traces of continuous layering, greenish gray, *Rock Basement*	C4	93	89				
6									
7			C5	92	43				

End of Borehole @ 7.6 m

Coring: 2nd Col = %Recovery, 3rd Col = %RQD

Loss

Lab, WO - Wash , SS-Split Spoon , C - Coring

BKS Global Mozambique Lda

BORING LOG

BOREHOLE: BH1-3
SHEET: 1 OF 1

PROJECT:	Soil Test for Ile-Cuamba Bridges	Coordinates:	S: 8208995.987 E: 300999.983	Water Level:	-0.60 m
LOCATION:	N(R)-Riverside of Bridge 1, Mutabasse	Ground Elevation, m-MSL:	324.439 m	Starting Date:	6/5/2011
CLIENT:	Chodai & EJEC	Max.Drilling Depth:	4.40 m	Finishing Date:	6/5/2011

DEPTH (m)	GRAPHIC LOG	SOIL DESCRIPTION	SAMPLING METHOD	SAMPLE NO.	RECOVERY (cm)	Total Unit Weight (Ton/m³) 1.6 1.8 2.0	Plastic Limit / Natural Water Content / Liquid Limit (%) 30 60 90 120	Specific Gravity 2.4 2.6 2.8	SPT Blow Count (Blow/ft) 10 20 30 40
		0.0-1.4 m, SW-SM, SAND with silt & gravel, 27% fine subangular gravel of 2 cm max sized, 10% silt, fine-medium subangular sand, well graded, very dense, brown-greenish gray, *River Sand*	WO						
1			WO						
			SS	1	25		• 13	• 2.7	• 50/11
2	1.4-3.0	1.4-3.0 m, expected shear zone within granitic GNEISS basement	C1	Loss					
3		3.0-4.4 m, granitic GNEISS, coarse grained, moderate-highly weathered on top 40 cm & fresh throughly, hard-very hard, traces of discontinuous layering of pink quartz vein, pale pinkish-greenish gray, *Rock Basement*	C2	Loss					
4			C3	0	96				
		End of Borehole @ 4.4 m							
		Coring: 2nd Col = %Recovery, 3rd Col = %RQD							

Loss
Lab, WO - Wash , SS-Split Spoon , C - Coring

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BORING LOG

BOREHOLE: BH1-4
SHEET: 1 OF 1

PROJECT:	Soil Test for Ile-Cuamba Bridges	Coordinates: S: 8208991.846 E: 300972.127	Water Level: -1.20 m
LOCATION:	N(L)-Riverside of Bridge 1, Mutabaisse	Ground Elevation, m-MSL: 326.231 m	Starting Date: 1/5/2011
CLIENT:	Chodai & EJEC	Max.Drilling Depth: 4.40 m	Finishing Date: 2/5/2011

DEPTH (m)	GRAPHIC LOG	SOIL DESCRIPTION	SAMPLING METHOD	SAMPLE NO	RECOVERY (cm)	Total Unit Weight (Ton/m³) 1.6 1.8 2.0	Plastic Limit / Natural Water Content / Liquid Limit (%) 30 60 90 120	Specific Gravity 2.4 2.6 2.8	SPT Blow Count (Blow/ft) 10 20 30 40
		0.0-1.4 m, SM, silty SAND, 30% silt, fine-medium subangular sand, very dense, dark brown, *River Sand*	WO						
1			WO						
			SS	1	40	2.0	17	2.7	50/25
2		1.4-4.4 m, granitic GNEISS, coarse grained, slightly weathered-fresh, hard, not obvious traces of discontinuous layering, pale greenish gray, *Rock Basement*	C1	100	92				
3			C2	100	81				
			C3	100					
4			C4	100	53				
		End of Borehole @ 4.4 m							
		Coring: 2nd Col = %Recovery, 3rd Col = %RQD							

Loss
Lab, WO - Wash , SS-Split Spoon , C - Coring

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BORING LOG

BOREHOLE: BH1-5
SHEET: 1 OF 1

PROJECT:	Soil Test for Ile-Cuamba Bridges	Coordinates: S: 8208960.866 E: 300983.798	Water Level: -1.65 m
LOCATION:	S(L)-Riverside of Bridge 1, Mulabaase	Ground Elevation, m-MSL: 324.700 m	Starting Date: 29/6/2011
CLIENT:	Chodai & EJEC	Max.Drilling Depth: 4.85 m	Finishing Date: 1/7/2011

DEPTH (m)	GRAPHIC LOG	SOIL DESCRIPTION	SAMPLING METHOD	SAMPLE NO	RECOVERY (cm)	Total Unit Weight (Ton/m³) 1.6 1.8 2.0	Plastic Limit / Natural Water Content / Liquid Limit (%) 30 60 90 120	Specific Gravity 2.4 2.6 2.8	SPT Blow Count (Blow/ft) 10 20 30 40
		0.0-2.0 m, SM, silty SAND, 16% silt, fine-medium-subangular sand with some little coarse, very loose, light brown, *River Sand*	WO						
1			WO						
			SS	1			18	2.7	1
			WO						
2		2.0-3.0 m, SW-SM, SAND with silt-silty SAND, 10% silt, fine-medium subangular sand, loose, well graded, dark-yellowish gray, *River Sand*	SS	2			18	2.6	1.8
3			WO						50/3
	3.0-3.4	3.0-4.8 m, granitic GNEISS, medium grained, fresh, very hard, comprise quartz mostly, traces of discontinuous layering and some quartz vein, grayish-brownish white-pale gray, *Rock Basement*	C1	56	50				
4			C2&3	100	60				
5		**End of Borehole @ 4.85 m**							
		Coring: 2nd Col = %Recovery, 3rd Col = %RQD							

Loss
Lab, WO - Wash , SS-Split Spoon , C - Coring

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BORING LOG

BOREHOLE: BH2-1
SHEET: 1 OF 1

PROJECT:	Soil Test for Ile-Cuamba Bridges	Coordinates: S: 8236887.290 E: 300055.639	Water Level: -1.90 m
LOCATION:	S-Abutment of Bridge 2, Muliguela	Ground Elevation, m-MSL: 412.924 m	Starting Date: 30/4/2011
CLIENT:	Chodai & EJEC	Max.Drilling Depth: 9.80 m	Finishing Date: 1/5/2011

DEPTH (m)	GRAPHIC LOG	SOIL DESCRIPTION	SAMPLING METHOD	SAMPLE NO	RECOVERY (cm)	Total Unit Weight (Ton/m³) (1.6 1.8 2.0)	Plastic Limit / Natural Water Content / Liquid Limit (30 60 90 120)	Specific Gravity (2.4 2.6 2.8)	SPT Blow Count (Blow/ft) (10 20 30 40)
		0.0-2.0 m, CL, CLAY with gravel, 10% fine subangular gravel of 2 mm max sized & 20% coarse subangular gravel of 3 cm max sized, medium plasticity, medium stiff, light reddish brown, *Backfill*	WO						
1			WO						
			SS	1	23				5
2			WO						
		2.0-3.0 m, SM, silty SAND, 22% silt, fine-medium subangular sand, loose, dark greenish gray, *Granitic Residual Soil*	SS	2	20	2.0	16	2.7	5
3			WO						
		3.0-5.0 m, CH, sandy CLAY, 39% fine-medium subangular sand, high plasticity, medium stiff, with some wood remnant, grayish green, *Granitic Residual Soil*	SS	3	45	1.9	36	2.6	6
4			WO						
			SS	4	26				18
5			WO						
		5.0-6.8 m, SM, silty SAND, 33% silt, fine-medium subangular sand, very dense, stripes of brown & gray, *Granitic Residual Soil*	SS	5	30				21
6			WO				26		
			SS	6	28	1.9		2.7	50/22
7			WO						
		6.8-9.8 m, granitic GNEISS, coarse grained, fresh, hard-very hard, traces of continuous layering, pale-dark greenish gray, *Rock Basement*	C1	100	68				
8									
			C2	100	44				
9									
			C3	100	70				
10		**End of Borehole @ 9.8 m**							
		Coring: 2nd Col = %Recovery, 3rd Col = %RQD							

Loss

Lab, WO - Wash , SS-Split Spoon , C - Coring

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BORING LOG

BOREHOLE: BH2-2
SHEET: 1 OF 1

PROJECT:	Soil Test for Ile-Cuamba Bridges	Coordinates: S: 8236952.016 E: 300023.648	Water Level: -1.50 m
LOCATION:	N-Abutment of Bridge 2, Muliquela	Ground Elevation, m-MSL: 410.623 m	Starting Date: 29/4/2011
CLIENT:	Chodai & EJEC	Max.Drilling Depth: 6.10 m	Finishing Date: 30/4/2011

DEPTH (m)	GRAPHIC LOG	SOIL DESCRIPTION	SAMPLING METHOD	SAMPLE NO.	RECOVERY (cm)	Total Unit Weight (Ton/m³) 1.6 1.8 2.0	Plastic Limit / Natural Water Content / Liquid Limit (%) 30 60 90 120	Specific Gravity 2.4 2.6 2.8	SPT Blow Count (Blow/ft) 10 20 30 40
		0.0-2.9 m, SM, silty SAND, 34% silt & clay, fine-medium subangular sand, slight-non plasticity, medium dense, greenish brown, *Granitic Residual Soil*	WO						
1			WO						
			SS	1	40	2.1	16	2.7	12
2			WO						
			SS	2	40				17
3			WO						50/ft
		2.9-6.1 m, granitic GNEISS, coarse grained, slightly-moderately weathered on top 30 cm with brownish white then fresh throughly, very hard, traces of continuous layering, pale-dark greenish gray, *Rock Basement*	C1	83	61				
4									
			C2	94	95				
5									
			C3	92	90				
6									
		End of Borehole @ 6.1 m							
		Coring: 2nd Col = %Recovery, 3rd Col = %RQD							

Loss
Lab, WO - Wash , SS-Split Spoon , C - Coring

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BORING LOG

BOREHOLE: BH2-3
SHEET: 1 OF 1

PROJECT:	Soil Test for Ile-Cuamba Bridges	Coordinates:	S: 8238924.456 E: 300034.812	Water Level:	-0.60 m
LOCATION:	N-Riverside of Bridge 2, Muiquitia	Ground Elevation, m-MSL:	407.996 m	Starting Date:	28/4/2011
CLIENT:	Chodai & EJEC	Max.Drilling Depth:	4.70 m	Finishing Date:	29/4/2011

DEPTH (m)	GRAPHIC LOG	SOIL DESCRIPTION	SAMPLING METHOD	SAMPLE NO.	RECOVERY (cm)	Total Unit Weight (T/mm³) 1.6 1.8 2.0	Plastic Limit / Natural Water Content (%) / Liquid Limit 30 60 90 120	Specific Gravity 2.4 2.6 2.8	SPT Blow Count (Blow/ft) 10 20 30 40
		0.0-1.7 m. SM, silty SAND, 28% silt & clay, fine sand, slight plasticity, very loose, brown, *River Sand*	WO						
1			WO						
			SS	1	40	2.0	24	2.4	0
2		1.7-4.7 m. granitic GNEISS, coarse grained, slightly weathered on top 50 cm & fresh throughly, hard-very hard, with white quartz veins @ 1.7-3.2 & 3.7-4.7 m, traces of discontinuous layering, pale-dark greenish gray, *Rock Basement*	C1	89	64				50/6
3			C2	100	100				
4			C3	95	100				
		End of Borehole @ 4.7 m							
		Coring: 2nd Col = %Recovery, 3rd Col = %RQD							

Loss
Lab, WO - Wash , SS-Split Spoon , C - Coring

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BORING LOG

BOREHOLE: BH3-1
SHEET: 1 OF 1

PROJECT:	Soil Test for Ile-Cuamba Bridges	Coordinates: S: 8251738.592 E: 299492.231	Water Level: -3.90 m
LOCATION:	S-Abutment of Bridge 3, Matacasse	Ground Elevation, m-MSL: 498.608 m	Starting Date: 10/5/2011
CLIENT:	Chodai & EJEC	Max.Drilling Depth: 16.50 m	Finishing Date: 12/5/2011

DEPTH (m)	GRAPHIC LOG	SOIL DESCRIPTION	SAMPLING METHOD	SAMPLE NO.	RECOVERY (cm)	Total Unit Weight (Ton/m³)	Plastic Limit / Natural Water Content / Liquid Limit (%)	Specific Gravity	SPT Blow Count (Blow/ft)
		0.0-4.0 m, MH, sandy SILT, 48% fine-medium subangular sand, slight plasticity, loose-medium dense, light reddish brown, *Backfill*	WO						
1			WO						
			SS	1	35				23
2			WO						
			SS	2	25		23	2.7	18
3			WO						
			SS	3	22				5
4			WO						
		4.0-5.0 m, ML-CH, sandy SILT-silty CLAY, 31-45% fine sand, medium-high plasticity, very loose, dark brownish gray, *River Silt & Clay*	SS	4	45	1.8	44	2.7	2
5			UD	1	50				
		5.0-13.5 m, SM, silty SAND, 20-30% silt, fine-coarse, subangular sand, comprises mostly quartz & feldspar, loose on the first meter, medium dense to 11 m then dense, traces of rock texture, layering, decomposed muscovite & feldspar, light yellowish brown with some white & greenish gray, *Granitic Residual Soil*	SS	5	20				13
6			WO						
			SS	6	17				7
7			WO						
			SS	7	23	1.9	20	2.7	12
8			WO						
			SS	8	23				23
9			WO						
			SS	9	18				16
10			WO						
			SS	10	18				16
11			WO						
			SS	11	20				35
12			WO						
			SS	12	32	1.8	17	2.7	35
13			WO						
			SS	13	3				50/10
14		13.5-16.5 m, granitic GNEISS, coarse grained, moderately weathered on top 1.7 m with brittle and whitish brown then fresh with hard and greenish gray throughly, with pink minerals, traces of discontinuous layering, pale-dark greenish gray, *Rock Basement*	C1	100	56				
15			C2	50	27				
16			C3	100	100				
		End of Borehole @ 16.5 m							
		Coring: 2nd Col = %Recovery, 3rd Col = %RQD							

Loss

Lab, WO - Wash , SS-Split Spoon , C - Coring

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BORING LOG

BOREHOLE: BH3-2
SHEET: 1 OF 1

PROJECT:	Soil Test for Ile-Cuamba Bridges	Coordinates: S: 8251763.534 E: 299462.557	Water Level: 4.10 m
LOCATION:	N-Abutment of Bridge 3, Matacasse	Ground Elevation, m-MSL: 498.804 m	Starting Date: 7/5/2011
CLIENT:	Chodai & EJEC	Max.Drilling Depth: 16.60 m	Finishing Date: 9/5/2011

DEPTH (m)	GRAPHIC LOG	SOIL DESCRIPTION	SAMPLING METHOD	SAMPLE NO	RECOVERY (cm)	Total Unit Weight (Ton/m³)	Plastic Limit / Natural Water Content / Liquid Limit (%)	Specific Gravity	SPT Blow Count (Blow/ft)
		0.0-4.0 m, ML, sandy SILT, 33% fine-coarse subangular sand, medium dense, light reddish brown, *Backfill*	WO						
1			WO						
			SS	1	30				22
2			WO						
			SS	2	30	1.9	26	2.7	18
3			WO						
			SS	3	29				14
4			WO						
		4.0-5.0 m, ML-CH, sandy SILT-silty CLAY, <50% fine sand, medium-high plasticity, very loose, dark brownish gray, *River Silt & Clay*	SS	4	32				2
5			WO						
		5.0-6.0 m, SM, silty SAND, 15% silt, fine-coarse subangular sand, medium dense, brownish gray, *Granitic Residual Soil*	SS	5	10				13
6			WO						
		6.0-8.0 m, SM, silty SAND, 37% silt, fine-medium subangular sand, traces of rock texture, shinny decomposed muscovite & feldspar, very. Loose, pale whitish gray, *Granitic Residual Soil*	SS	6	25	1.7	45	2.7	2
7			WO						
			SS	7	10				6
8			WO						
		8.0-10.0 m, SM, silty SAND, 20% silt, fine-coarse, subangular sand, medium dense, yellowish brown, *Granitic Residual Soil*	SS	8	8				22
9			WO						
			SS	9	15		18	2.7	22
10			WO						
		10.0-13.6 m, SM, silty SAND, 20% silt, fine-coarse subangular sand, traces of rock texture, shinny decomposed muscovite & feldspar, medium dense-dense, dark yellowish brown-dark yellowish gray, *Granitic Residual Soil*	SS	10	30				16
11			WO						
			SS	11	32				41
12			WO						
			SS	12	35				24
13			WO						
			SS	13	22		18	2.7	50/10
14		13.6-16.6 m, granitic GNEISS, coarse grained, slightly weathered-fresh, very hard, greenish gray, *Rock Basement*	C1	100	100				
15			C2	93	83				
16			C3	53	100				
		End of Borehole @ 16.6 m							
		Coring: 2nd Col = %Recovery, 3rd Col = %RQD							

Loss

Lab, WO - Wash , SS-Split Spoon , C - Coring

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BORING LOG

BOREHOLE: BH4-1
SHEET: 1 OF 1

PROJECT:	Soil Test for Ile-Cuamba Bridges	Coordinates: S 8252727.030 E 297090.913	Water Level: -1.00 m
LOCATION:	S-Abutment of Bridge 4, Lua	Ground Elevation, m-MSL: 507.986 m	Starting Date: 22/4/2011
CLIENT:	Chodai & EJEC	Max.Drilling Depth: 5.00 m	Finishing Date: 23/4/2011

DEPTH (m)	GRAPHIC LOG	SOIL DESCRIPTION	SAMPLING METHOD	SAMPLE NO	RECOVERY (cm)	Total Unit Weight (Ton/m³) 1.2 1.4 1.6	Plastic Limit / Natural Water Content / Liquid Limit (%) 30 60 90 120	Specific Gravity 2.4 2.6 2.8	SPT Blow Count (Blow/ft) 10 20 30 40
		0.0-1.5 m. SP-SM, SAND with silt&gravel, 10% silt, 20% angular gravel of schist, fine-medium subangular sand, traces of shinny decomposed muscovite, medium dense, dark brown, *Crust with Schist Residual Soil*	WO						
1			WO						
			SS	1	24		14	2.6	18
		1.5-5.0 m. granitic GNEISS, coarse grained, moderately weathered on top 0.5 m then fresh throughly, very hard, with trace of discontinuous layering, greenish gray-dark gray, *Rock Basement*	WO						
2			C1	100	85				
3				100	100				
4			C2	100	100				
5		**End of Borehole @ 5.0 m**							
		Coring: 2nd Col = %Recovery, 3rd Col = %RQD							

50

Loss

Lab, WO - Wash , SS-Split Spoon , C - Coring

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BORING LOG

BOREHOLE: BH4-2
SHEET: 1 OF 1

PROJECT:	Soil Test for Ile-Cuamba Bridges	Coordinates:	S: 8252767.880 E: 297034.214	Water Level:	-3.00 m
LOCATION:	N-Abutment of Bridge 4, Lua	Ground Elevation, m-MSL:	508.543 m	Starting Date:	24/4/2011
CLIENT:	Chodai & EJEC	Max.Drilling Depth:	6.70 m	Finishing Date:	25/4/2011

DEPTH (m)	GRAPHIC LOG	SOIL DESCRIPTION	SAMPLING METHOD	SAMPLE NO.	RECOVERY (cm)	Total Unit Weight (Ton/m³) 1.2 1.4 1.6	Plastic Limit / Natural Water Content / Liquid Limit (%) 30 60 90 120	Specific Gravity 2.4 2.6 2.8	SPT Blow Count (Blow/ft) 10 20 30 40
		0.0-3.0 m. SM, silty SAND, <50% silt with little clay, fine sand, slight-low plasticity, loose, light reddish brown, *Backfill*	WO						
1			WO						
			SS	1	30				8
2			WO						
			SS	2	28				6
3			WO						
		3.0-3.7 m. SM, silty SAND, 19% silt, fine-medium subangular sand with little coarse, clean, medium dense, light brown with some gray. *River Sand*	SS	3	30		12	2.7	22
4			WO						50/0
		3.7-6.7 m. granitic GNEISS, coarse grained, fresh, very hard, with trace of discontinuous layering, greenish gray. *Rock Basement*	C1	100	70				
5				100	93				
6			C2	100	100				
7		**End of Borehole @ 6.7 m**							

Coring: 2nd Col = %Recovery, 3rd Col = %RQD

Loss
Lab, WO - Wash , SS-Split Spoon , C - Coring

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BORING LOG

BOREHOLE: BH4-3
SHEET: 1 OF 1

PROJECT:	Soil Test for Ile-Cuamba Bridges	Coordinates: S: 8252708.299 E: 297055.465	Water Level: -0.50 m
LOCATION:	S-Riverside of Bridge 4, Lua	Ground Elevation, m-MSL: 506.186 m	Starting Date: 26/4/2011
CLIENT:	Chodai & EJEC	Max.Drilling Depth: 4.30 m	Finishing Date: 27/4/2011

DEPTH (m)	GRAPHIC LOG	SOIL DESCRIPTION	SAMPLING METHOD	SAMPLE NO.	RECOVERY (cm)	Total Unit Weight (Ton/m³) 1.2 1.4 1.6	Plastic Limit / Natural Water Content / Liquid Limit (%) 30 60 90 120	Specific Gravity 2.4 2.6 2.8	SPT Blow Count (Blow/ft) 10 20 30 40
		0.0-1.3 m, SM, silty SAND, 35% silt, fine sand with little medium & coarse, slight plasticity, very dense, dark brownish gray. *River Sand*	WO						
1			WO						
			SS	1	30		• 37	• 2.6	• 50/15
2		1.3-4.3 m, granitic GNEISS, coarse grained, slightly weathered on top 30 cm & fresh throughly, hard-very hard, with pink quartz vein @ 2.0-2.2 & 3.0-3.4 m, traces of discontinuous layering, pale-dark greenish gray. *Rock Basement*	C1	100	61				
3			C2	100	100				
4			C3	100	100				
		End of Borehole @ 4.3 m							
		Coring: 2nd Col = %Recovery, 3rd Col = %RQD							

Loss
Lab, WO - Wash , SS-Split Spoon , C - Coring

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BORING LOG

BOREHOLE: BH5-1
SHEET: 1 OF 2

PROJECT:	Soil Test for Ile-Cuamba Bridges	Coordinates: S: 8285611.369 E: 295199.796	Water Level: 4.40 m
LOCATION:	S-Abutment of Bridge 5, Ualasse	Ground Elevation, m-MSL: 569.957 m	Starting Date: 18/4/2011
CLIENT:	Chodai & EJEC	Max.Drilling Depth: 28.50 m	Finishing Date: 22/4&23/6/2011

DEPTH (m)	GRAPHIC LOG	SOIL DESCRIPTION	SAMPLING METHOD	SAMPLE NO.	RECOVERY (cm)	Total Unit Weight (Ton/m³) (1.5 1.8 2.0)	Plastic Limit / Natural Water Content / Liquid Limit (30 60 90 120)	Specific Gravity (2.4 2.6 2.8)	SPT Blow Count (Blow/ft) (10 20 30 40)
		0.0-7.0 m, SM, silty SAND, 43% silt, fine-medium subangular sand with some coarse & little fine gravel of 0.5 cm max sized, slight plasticity, loose-medium dense, light reddish brown, *Backfill*	WO						
1			WO						
			SS	1	24				2
2			WO						
			SS	2	29	1.9	19	2.7	8
3			WO						
			SS	3	20	2.0	25	2.7	6
4			WO						
			SS	4	20				6
5			WO						
			SS	5	20				4
6			WO						
			SS	6	45				3
7			WO						
		7.0-8.0 m, SM, silty SAND, 19% silt, fine-medium, subangular sand, clean, loose, blackish brown, *River Sand*	SS	7/1	30	2.1	13	2.6	5
8			SS	7/2	33				4
		8.0-9.0 m, SM, silty SAND, <50% sil, fine sand, slight plasticity, loose, pale greenish gray, *Granitic Residual Soil*	SS	8	23				6
9			WO						
		9.0-11.0 m, SM, silty SAND, 30% silt, fine-coarse subangular sand with little fine gravel of 3 mm max sized, medium dense, whitish gray, *Granitic Residual Soil*	SS	9	43	1.9	17	2.6	15
10			WO						
			SS	10	20				15
11			WO						
			SS	11/1	32				19
			SS	11/2	25				10
12		11.5-17.0 m, SM, silty SAND, 35% silt,fine-medium sand with little coarse, loose-medium dense, traces of shinny decomposed muscovite with layering texture of schist, light brown, *Granitic Residual Soil*	SS	12	34	1.7	34	2.7	16
13			WO						
			SS	13	35				14
14			WO						
			SS	14	34				16
15			WO						
			SS	15	38				17
16			WO						
			SS	16	26				15
17			WO						
		17.0-20.0 m, SM, silty SAND, 14% silt, fine-coarse subangular sand of quartz & decomposed feldspar with some fine subangular-subround quartz gravel of 1 cm max sized, dense, pale brown with white mottle, *Granitic Residual Soil*	SS	17	30		12	2.7	43
18			WO						
			SS	18	25				36
19			WO						
			SS	19	23				31
20			WO						
		20.0-24.0 m, SM, silty SAND, 39% silt, fine-medium subangular sand, loose-medium dense, traces of shinny decomposed muscovite with layering texture of schist, light brown, *Granitic Residual Soil*	SS	20	32				25
21			WO						
			SS	21	45	1.8	24	2.7	26
22			WO						
			SS	22	30				38
23			WO						
			SS	23	38				41
		24.0-26.5 m, SW-SM, SAND, 12-25% silt, fine-coarse subangular sand with some fine quartz gravel of 1 cm max sized, well graded, very dense, pale-light brown, *Granitic Residual Soil*	WO						
24			SS	24	20		12	2.6	50/24
			WO						
25			SS	25	35		26	2.7	50/25
			WO						

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BORING LOG

BORING NO. BH5-1
SHEET 2 OF 2

PROJECT:	Soil Test for Ile-Cuamba Bridges	Coordinates N: 8265611.369 E: 295199.796	Water Level: -4.40 m
LOCATION:	S-Abutment of Bridge 5, Uatasse	Ground Elevation (m-MSL): 569.957 m	Starting Date: 18/4/2011
CLIENT:	Chodai & EJEC	Max.Drilling Depth: 26.50 m	Finishing Date: 22/4&23/6/2011

DEPTH (m)	GRAPHIC LOG	SOIL DESCRIPTION	SAMPLING METHOD	SAMPLE NO.	RECOVERY (cm)	Organic Content (%) 1.0 2.0 3.0	Plastic Limit / Natural Water Content / Liquid Limit (%) 30 60 90 120	Specific Gravity 2.4 2.6 2.8	SPT Blow Count (Blow/ft) 10 20 30 40
26		24.0-26.5 m, SW-SM, SAND, 12-25% silt, fine-coarse subangular sand with some fine quartz gravel of 1 cm max sized, well graded, very dense, pale-light brown, *Granitic Residual Soil*	SS	25	35				
			WO						
			SS	20	30		• 19	• 2.7	• 50/21
		End of Borehole @ 26.5 m							
		Coring: 2nd Col = %Recovery, 3rd Col = %RQD							

Loss
Lab, WO - Wash out, SS-Split Spoon Sampling

BKS Global Mozambique Lda

BORING LOG

BOREHOLE: BH5-2
SHEET: 1 OF 1

PROJECT:	Soil Test for Ile-Cuamba Bridges	Coordinates: S: 8265639.986 E: 295164.438	Water Level: -5.00 m
LOCATION:	S-Abutment of Bridge 5, Uaiasse	Ground Elevation, m-MSL: 569.917 m	Starting Date: 18/6/2011
CLIENT:	Chodai & EJEC	Max.Drilling Depth: 23.50 m	Finishing Date: 21/6/2011

DEPTH (m)	GRAPHIC LOG	SOIL DESCRIPTION	SAMPLING METHOD	SAMPLE NO.	RECOVERY (cm)	Total Unit Weight (T/m³)	Plastic Limit / Natural Water Content / Liquid Limit (%)	Specific Gravity	SPT Blow Count (Blow/ft)
		0.0-7.0 m, SM, silty SAND, 49% silt, fine-medium sand with some coarse, loose-medium dense, reddish brown, *Backfill*	WO						
			WO						
1			SS	1	30				13
			WO						
2			SS	2	30				14
			WO						
3			SS	3	20		21	2.7	10
			WO						
4			SS	4	15				6
			WO						
5			SS	5	33				7
			WO						
6			SS	6	30		26	2.7	7
			WO						
7		7.0-8.0 m, ML, sandy SILT, 45% fine-medium sand, medium plasticity, very loose, brown, *River Silt*	SS	7	25		21	2.7	2
			WO						
8		8.0-9.0 m, SM-SC, silty clayey SAND, 40% silt & clay, low plasticity, fine-medium subangular sand, very loose, greenish brown-brownish gray, *Granitic Residual Soil*	SS	8	30		17	2.6	3
			WO						
9		9.0-11.5 m, SW-SM, SAND with silt, 9-13% silt, 6-18% fine subangular gravel of 2 cm max sized, fine-coarse subangular sand, medium dense-dense, well graded, pale yellowish gray, *Granitic Residual Soil*	SS	9	30		1	2.7	26
			WO						
10			SS	10	15		9	2.7	16
			WO						
11		11.5-12.0 m, SM, silty SAND, non plasticity, medium dense, traces of shinny decomposed muscovite brown, *Granitic Residual Soil*	SS	11	10				13
			WO						
12		12.0-17.5 m, SM, silty SAND, 27-38% silt, fine-coarse subangular sand, medium dense, traces of rock texture, decomposed feldspar, with condense muscovite strip, grayish white-yellowish & light brown, *Granitic Residual Soil*	SS	12	32		20	2.7	20
			WO						
13			SS	13	23				18
			WO						
14			SS	14	12				23
			WO						
15			SS	15	30				30
			WO						
16			SS	16	45		26	2.6	21
			WO						
17			SS	17	30				32
		17.5-20.0 m, SM, silty SAND, 19% silt, fine-medium sand, dense, traces of rock texture & shinny decomposed muscovite, grayish brown-brown, *Granitic Residual Soil*	WO						
18			SS	18	34		20	2.7	34
			WO						
19			SS	19	32				33
			WO						
20		20.0-22.0 m, SM, silty SAND, 21% silt, random fine subangular quartz gravel of 1 cm max sized @ top 3 cm, fine-medium subangular sand, very dense, traces of rock texture, decomposed feldspar & shinny muscovite, light grayish brown, *Granitic Residual Soil*	SS	20	33				50/30
			WO						
21			SS	21	21		17	2.7	50/6
			WO						
22		22.0-23.0 m, granitic GNEISS, coarse grained, highly weathered, very brittle, traces of continuous quartz vein & muscovite stripe, greenish gray, *Rock Basement*	SS	22	7				50/1
23			C-1	16	0				

End of Borehole @ 23.0 m

Coring: 2nd Col = %Recovery, 3rd Col = %RQD

Loss

Lab, WO - Wash , SS-Split Spoon , C - Coring

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BORING LOG

BOREHOLE: BH6-1
SHEET: 1 OF 1

PROJECT:	Soil Test for Ile-Cuamba Bridges	Coordinates:	S: 8289211.258 E: 279135.313	Water Level:	4.50 m
LOCATION:	S-Abutment of Bridge 3, Licungo	Ground Elevation, m-MSL:	625.273 m	Starting Date:	20/5/2011
CLIENT:	Chodai & EJEC	Max.Drilling Depth:	17.00 m	Finishing Date:	22/5/2011

DEPTH (m)	GRAPHIC LOG	SOIL DESCRIPTION	SAMPLING METHOD	SAMPLE NO.	RECOVERY (cm)	Total Unit Weight (Ton/m³)	Plastic Limit / Natural Water Content / Liquid Limit (%)	Specific Gravity	SPT Blow Count (Blow/ft)
		0.0-5.0 m, SM, silty SAND, 42% silt, fine sand with little medium, very loose-loose, dark brown, *Backfill*	WO						
1			WO						
			SS	1	18				1
2			WO						
			SS	2	20				5
3			WO						
			SS	3	25				5
4			WO						
			SS	4	25		72	2.5	2
5			WO						
		5.0-7.0 m, SC, clayey SAND, 30% clay, fine-coarse subangular sand, low plasticity, very loose, dark blackish brown, *River Sand-Clay Mixture*	SS	5	10				0
6			WO						
		5.0-7.0 m, SP, SAND, coarse subangular sand, very loose, poorly graded, dark brown, *River Sand*	SS	6	10				2
7			WO						
		7.0-11.0 m, SW-SP, SAND & SAND with gravel interbeded, medium-coarse subangular sand with 9-18% fine sand & 4-48% fine subangular quartz gravel of 1 cm max sized, poorly-well graded, loose, brown-dark brown-greenish gray, *River Sand*	SS	7	10		19	2.7	5
8			WO						
			SS	8	10		14	2.6	6
9			WO						
			SS	9	15		17	2.7	10
10			WO						
			SS	10	15		8	2.7	39
11			WO						
		11.0-14.0 m, SM, silty SAND, 19-24% silt, fine-medium subangular sand, medium-very dense, traces of rock texture, grayish brown-grayish green-yellowish brown, *Granitic Residual Soil*	SS	11	33		22	2.7	27
12			WO						
			SS	12	7				25
13			WO						
			SS	13	5		16	2.7	50/5
14			WO						
		14.0-17.0 m, granitic GNEISS, coarse grained, fresh, hard, jointed, traces of pink quartz vein & continuous layering, greenish gray, *Rock Basement*	C1	50	0				
15									
16			C2	36	0				
17			C3	33	12				
		End of Borehole @ 17.0 m							

Coring: 2nd Col = %Recovery, 3rd Col = %RQD

Loss

Lab, WO - Wash , SS-Split Spoon , C - Coring

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BORING LOG

BOREHOLE: BH6-2
SHEET: 1 OF 1

PROJECT:	Soil Test for Ile-Cuamba Bridges	Coordinates:	S 8289224.292 E 279094.467	Water Level	4.80 m
LOCATION:	N-Abutment of Bridge 3, Licungo	Ground Elevation, m-MSL	626.000 m	Starting Date	17/5/2011
CLIENT:	Chodai & EJEC	Max.Drilling Depth	19.10 m	Finishing Date	20/5/2011

DEPTH (m)	GRAPHIC LOG	SOIL DESCRIPTION	SAMPLING METHOD	SAMPLE NO.	RECOVERY (cm)	Total Unit Weight (Ton/m³)	Plastic Limit / Natural Water Content / Liquid Limit (%)	Specific Gravity	SPT Blow Count (Blow/ft)
		0.0-5.0 m, SM, silty SAND, 36% silt, fine sand with little medium, very loose-loose, dark brown, dry or above groundwater level, *Backfill*	WO						
1			WO						
			SS	1	30				5
2			WO						
			SS	2	30				3
3			WO						
			SS	3	35		45	2.5	5
4			WO						
			SS	4	31				5
5			WO						
		5.0-8.0 m, SM, silty SAND, 22% silt, fine sand with little medium, very loose, blackish brown, submerge under groundwater table, *River Sand*	SS	5	45				0
6			WO						
			SS	6	45				0
7			WO						
			SS	7	45		49	2.5	2
8			WO						
		8.0-9.0 m, SP, SAND with gravel, <50% fine gravel of 0.5 cm max sized, coarse subangular sand, loose, poorly graded, dark brownish gray, *River Sand*	SS	8	10				6
9			WO						
		9.0-11.0, SW, SAND with silt, 10% silt with very random of coarse subround gravel of 3 cm max sized, fine-coarse subangular sand, clean, well graded, medium dense, yellowish gray, *River Sand*	SS	9	12				11
10			WO						
			SS	10	22		10	2.7	19
11			WO						
		11.0-16.0 m, SM, silty SAND, 23% silt, fine-medium sand, traces of decomposed feldspar & shinny muscovite, medium dense-dense, yellowish gray-pale & dark brown, *Granitic Residual Soil*	SS	11	27				11
12			WO						
			SS	12	22				13
13			WO						
			SS	13	27				27
14			WO						
			SS	14	24				21
15			WO						
			SS	15	26		19	2.9	50/27
16			WO						
		16.0-19.1 m, granitic GNEISS, coarse grained, moderately weathered on top 10 cm then fresh throughly, very hard, traces of quartz vein & continuous layering, greenish gray, *Rock Basement*	C1	30	54				
17			C2	93	86				
18			C3	100	72				
19		**End of Borehole @ 19.1 m**							

Coring: 2nd Col = %Recovery, 3rd Col = %RQD

Loss

Lab, WO - Wash , SS-Split Spoon , C - Coring

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BORING LOG

BOREHOLE: BH7-1
SHEET: 1 OF 1

PROJECT:	Soil Test for Ile-Cuamba Bridges	Coordinates: S: 8295440.976 E: 272177.866	Water Level: -1.55 m
LOCATION:	S-Abutment of Bridge 7, Nivaco	Ground Elevation, m-MSL: 699.740 m	Starting Date: 15/5/2011
CLIENT:	Chodai & EJEC	Max.Drilling Depth: 8.80 m	Finishing Date: 16/5/2011

DEPTH (m)	GRAPHIC LOG	SOIL DESCRIPTION	SAMPLING METHOD	SAMPLE NO	RECOVERY (cm)	Total Unit Weight (Ton/m³)	Plastic Limit / Natural Water Content / Liquid Limit (%)	Specific Gravity	SPT Blow Count (Blow/ft)
		1.0-2.0 m, SM, silty SAND, 20% silt & clay & 10% fine subangular gravel of 0.5 cm max sized, low plasticity, very loose, reddish brown, *Backfill*	WO						
1			WO						
			SS	1	7				2
			WO						
2		2.0-4.0 m, SM, silty SAND, 49% silt, fine sand, slight plasticity, very loose, dark blackish gray, *River Sand*	SS	2	45				0
			WO						
3			SS	3	35		37	2.6	0
			WO						
4		4.0-5.0 m, SW, SAND, fine-medium subangular sand with very little coarse & silt, loose, clean, well graded, dark grayish brown, *River Sand*	SS	4	30		19	2.7	4
			WO						
5		5.0-5.8 m, SM, silty SAND, 15% silt, fine-medium subangular sand with little coarse, medium dense, clean, grayish green, *Granitic Residual Soil*	SS	5	24		16	2.7	39
			WO						50/6
6	6.0-6.6	5.8-8.8 m, granitic GNEISS, coarse grained, moderately weathered on top 2 m with pale grayish white then slightly weathered-fresh throughly with greenish gray, brittle-hard, jointed & iron oxide coated with some black shear plane at the bottom, *Rock Basement*	C1	30	0				
7			C2	15	10				
8	7.4-7.8		C3	62	0				
9			C4	72					

End of Borehole @ 8.8 m

Coring: 2nd Col = %Recovery, 3rd Col = %RQD

Loss

Lab, WO - Wash , SS-Split Spoon , C - Coring

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BORING LOG

BOREHOLE: BH7-2
SHEET: 1 OF 1

PROJECT:	Soil Test for Ile-Cuamba Bridges	Coordinates: S 8295457.010 E 272154.920	Water Level: -0.70 m
LOCATION:	N-Abutment of Bridge 7, Nivaco	Ground Elevation, m-MSL: 700.284 m	Starting Date: 13/5/2011
CLIENT:	Chodai & EJEC	Max.Drilling Depth: 12.60 m	Finishing Date: 14/5/2011

DEPTH (m)	GRAPHIC LOG	SOIL DESCRIPTION	SAMPLING METHOD	SAMPLE NO.	RECOVERY (cm)	Total Unit Weight (Ton/m³)	Plastic Limit / Natural Water Content / Liquid Limit (%)	Specific Gravity	SPT Blow Count (Blow/ft)
		0.0-4.0 m, SC, clayey SAND, 21% silt & clay, fine-medium sand, high plasticity, very loose, dark brownish gray, *River Sand & Clay*	WO						
1			WO						
			SS	1	45				0
2			WO						
			SS	2	40		30	2.6	2
3			WO						
			SS	3	40				2
4			WO						
		4.0-5.0 m, SM, silty SAND, 18% silt, fine-medium subangular sand, very loose, clean, dark blackish gray, *River Sand*	SS	4	19		20	2.7	4
5			WO						
		5.0-6.0 m, CL, sandy CLAY,49% fine-coarse sand with very little fine gravel, high plasticity, medium stiff, dark greenish gray, *Alluvial Clay*	SS	5	45		32	2.6	6
6			WO				18		
		6.0-9.6 m, SM, silty SAND, 20-24% silt, fine-medium sand with little coarse & fune gravel, very dense, with random loose rock @ 7 m, yellowish brown, *Granitic Residual Soil*	SS	6	15			2.8	50/10
7			WO						
			C1						
8			WO				15		
			SS	8	22			2.6	50/14
9			WO						
			SS	9	10				23 / 50/ii
10	9.6-10.5	9.6-12.6 m, granitic GNEISS, coarse grained, slightly weathered-fresh, brittle-hard, jointed, greenish gray, *Rock Basement*	C1	100	56				
11			C2	50	27				
12	12.3-12.6		C3	100	100				

End of Borehole @ 12.6 m

Coring: 2nd Col = %Recovery, 3rd Col = %RQD

Loss

Lab, WO - Wash , SS-Split Spoon , C - Coring

BKS Global Mozambique Lda

BORING LOG

BOREHOLE: BH8-1
SHEET: 1 OF 1

PROJECT:	Soil Test for Ile-Cuamba Bridges	Coordinates:	S: 8308202.322 E: 259777.726	Water Level:	-2.60 m
LOCATION:	S-Abutment of Bridge 8, Matatse	Ground Elevation, m-MSL:	719.700 m	Starting Date:	26/5/2011
CLIENT:	Chodai & EJEC	Max.Drilling Depth:	12.90 m	Finishing Date:	26/5/2011-28/6/2011

DEPTH (m)	GRAPHIC LOG	SOIL DESCRIPTION	SAMPLING METHOD	SAMPLE NO	RECOVERY (cm)	Total Unit Weight (Ton/m³)	Plastic Limit / Natural Water Content / Liquid Limit (%)	Specific Gravity	SPT Blow Count (Blow/ft)
		0.0-3.0 m, CL-SC, sandy CLAY-clayey SAND, 37-50% clay, low plasticity, medium dense, blackish brown-brown, *Alluvial Clay & Sand*	WO						
1			WO						
			SS	1	20		21	2.7	16
2			WO						
			SS	2	27	2.0	19	2.7	11
3		3.0-4.0 m, SM, silty SAND wt gravel, 15% silt & 17% fine subangular gravel, fine-coarse subangular sand, very dense, light brown, *Granitic Residual Soil*	WO						
			SS	3	33		8	2.7	50/17
4		4.0-7.0 m, SM, silty SAND, 21% silt, fine-coarse subangular sand with little fine gravel, dense-very dense, traces of decomposed shinny muscovite & feldspar, light brown-brown, *Granitic Residual Soil*	WO						
			SS	4	11				50/11
5			WO						
			SS	5	25		11	2.7	48
6			WO						
			SS	6	9				50/10
7			WO						
		7.0-7.5 m, granitic GNEISS-SCHIST basement?	SS	7	Loss				50/5
8		7.5-12.9 m, granitic GNEISS-SCHIST, medium-coarse grained, moderately -highly weathered, brittle-hard, jointed & broken into pieces with iron oxide coated, traces of continuous muscovite layering, brownish white-gray with brown-dark grayish brown for muscovite layer, *Rock Basement*	C1&2	50	10				
8.1-8.9									
9					11				
9.4-10.1			C3	53	0				
10									
11			C4	80	15				
12					33				
			C5	89					
13		**End of Borehole @ 12.9 m**							
		Coring: 2nd Col = %Recovery, 3rd Col = %RQD							

Loss

Lab, WO - Wash , SS-Split Spoon , C - Coring

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BORING LOG

BOREHOLE: BH8-2
SHEET: 1 OF 1

PROJECT:	Soil Test for Ile-Cuamba Bridges	Coordinates: S: 8308227.682 E: 259773.500	Water Level: -1.80 m
LOCATION:	N-Abutment of Bridge B, Matatse	Ground Elevation, m-MSL: 721.500 m	Starting Date: 27/5/2011
CLIENT:	Chodai & EJEC	Max.Drilling Depth: 9.00 m	Finishing Date: 27/5/25-27/6/2011

DEPTH (m)	GRAPHIC LOG	SOIL DESCRIPTION	SAMPLING METHOD	SAMPLE NO	RECOVERY (cm)	Total Unit Weight (Ton/m³) 1.2 1.4 1.6	Plastic Limit / Natural Water Content / Liquid Limit (%) 30 60 90 120	Specific Gravity 2.4 2.6 2.8	SPT Blow Count (Blow/ft) 10 20 30 40
		0.0-2.0 m, SC, clayey SAND, 45% clay, fine-medium subangular sand with very random fine angular quartz gravel of 1 cm max sized, low-medium plasticity, medium dense, grayish brown, *Alluvial Clay & Sand*	WO						
1			WO						
			SS	1	30		15	2.7	14
			WO						
2		2.0-3.0 m, SM, silty SAND wt gravel, 15% silt, 15% fine subangular gravel, fine-medium sand, very dense, yellowish brown, *Granitic Residual Soil*	SS	2	25		8	2.7	50/20
			WO						
3		3.0-5.0 m, SM, silty SAND, 21-28% silt, fine-medium sand, very dense, traced of granitic rock texture & decomposed feldspar to be silt, ligh-yellowisht brown, *Granitic Residual Soil*	SS	3	33		16	2.7	50/24
			WO						
4			SS	4	40		17	2.7	50/27
			WO						
5		5.0-8.0 m, Granitic Residual Soil	SS	5	Loss				50/5
			WO						
6			SS	6	Loss				50/4
			WO						
7			SS	7	Loss				50/5
			WO						
8		8.0-9.0 m, SM, silty SAND, 30% silt, fine subangular sand, very dense, traces of rock texture, greenish gray & light brown, *Granitic Residual Soil*	SS	8	10				50/6
9		8.5-11.0 m, granitic GNEISS, coarse grained, moderately - highly weathered, partly washable into sand for muscovite-rich layers with very brittle, all others brittle-hard but broken into pieces with iron oxide coated, traces of continuous layering, whitish gray-grayish brown, *Rock Basement*	C1	40	0				
			C2	10	0				
10			C3	10	0				
11		**End of Borehole @ 11.0 m**							

Coring: 2nd Col = %Recovery, 3rd Col = %RQD

Loss

Lab, WO - Wash , SS-Split Spoon , C - Coring

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BORING LOG

BOREHOLE: BH9-1
SHEET: 1 OF 1

PROJECT:	Soil Test for Ile-Cuamba Bridges	Coordinates: S 8308760.314 E 259944.034	Water Level: -1.70 m
LOCATION:	S-Abutment of Bridge 9, Namialgua	Ground Elevation, m-MSL: 707.500 m	Starting Date: 23/5/2011
CLIENT:	Chodai & EJEC	Max.Drilling Depth: 8.02 m	Finishing Date: 24/5/2011

DEPTH (m)	GRAPHIC LOG	SOIL DESCRIPTION	SAMPLING METHOD	SAMPLE NO	RECOVERY (cm)	Total Unit Weight (Ton/m³)	Plastic Limit / Natural Water Content / Liquid Limit (%)	Specific Gravity	SPT Blow Count (Blow/ft)
		0.0-2.5 m. SM, silty SAND, 13-39% silt, fine-coarse subangular sand with random fine subangular gravel of 2 cm max sized, silght plasticity, traces of decomposed shinny muscovite & felspar, yellowish brown-brown, *Granitic Residual Soil*	WO						
			WO						
1			SS	1	15		12	2.7	15
			WO						
2			SS	2	34		22	2.7	34
		2.5-5.0 m. SW, SAND, fine-medium subangular sand, very dense, well graded, traces of decomposed shinny muscovite, brown, *Granitic Residual Soil*							50/0
3			C1	Loss					
			SS	3	15		13	2.7	50/16
4			SS	4	7				50/8
			C2	Loss					
5		5.0-7.0 m. SM, silty SAND, 16% silt, fine-coarse subangular sand with little fine gravel, very dense, yellowish brown, *Granitic Residual Soil*	SS	5	Loss				50/12
			WO						
6			SS	6	20		11	2.6	50/4
			WO						
7		7.0-8.0 m, granitic GNEISS basement	SS	7	Loss				50/2
			C3	Loss					
8		**End of Borehole @ 8.0 m**							

Coring: 2nd Col = %Recovery, 3rd Col = %RQD

Loss
Lab, WO - Wash , SS-Split Spoon , C - Coring

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BORING LOG

BOREHOLE: BH9-2
SHEET 1 OF 1

PROJECT:	Soil Test for Ile-Cuamba Bridges	Coordinates:	S: 8308788.293 E: 259950.071	Water Level:	-2.40 m
LOCATION:	N-Abutment of Bridge 9, Namisagua	Ground Elevation, m-MSL:	707.515 m	Starting Date:	24/5/2011
CLIENT:	Chodal & EJEC	Max Drilling Depth:	13.02 m	Finishing Date:	26/5/2011

DEPTH (m)	GRAPHIC LOG	SOIL DESCRIPTION	SAMPLING METHOD	SAMPLE NO.	RECOVERY (cm)	Total Unit Weight (Ton/m³)	Plastic Limit / Natural Water Content / Liquid Limit (%)	Specific Gravity	SPT Blow Count (Blow/ft)
		0.0-3.0 m, SM, silty SAND, 28% silt, 13% coarse sand & fine gravel of 3 mm max sized, fine-medium subangular sand, loose-medium dense, dark reddish brown, *River Sand*	WO						
1			WO						
			SS	1	35				16
2			WO						
			SS	2	25	2.1	15	2.7	9
3			WO						
		3.0-4.0 m, SW-SM, SAND with silts, 8% silt, 7% fine gravel of 2-3 mm sized, fine-coarse subangular sand, well graded, loose, brown, *River Sand*	SS	3	25		13	2.8	9
4			WO						
		4.0-5.6 m, SM, silty SAND, 28% silt, 11% coarse sand-fine subangular gravel of 3 cm max sized, fine-medium subangular sand,medium dense-dense, gray-brown, *Granitic Residual Soil*	SS	4	28		13	2.8	40
5			WO						
			SS	5	9				24
6		5.6-13.0 m, granitic GNEISS, coarse grained, moderately weathered, hard-very hard, broken into pieces with iron oxide coated generally, traces of quartz dyke on top first meter, partly washable into silt & sand, pale brownish white-pale greenish gray, *Rock Basement*	C1	40	0				50/0
			C2	0	0				
7			SS	7	16				50/5
8			C3	8	0				
			C4	0	0				
9			SS	9	16				
			C5	0	0		17	2.8	50/5
10			SS	10	12		9	2.7	50/12
			C6	0	0				
11			SS	11	2				50/0
			C7	0	0				
12			SS	12	0				50/0
			C8	0	0				
13		End of Borehole @ 13.0 m	SS	13	0				50/0

Coring: 2nd Col = %Recovery, 3rd Col = %RQD

Loss
Lab, WO - Wash , SS-Split Spoon , C - Coring

BKS Global Mozambique Lda

BORING LOG

BOREHOLE: BH10-1
SHEET: 1 OF 1

PROJECT:	Soil Test for Ile-Cuamba Bridges	Coordinates:	S: 8319938.254 E: 246664.877	Water Level:	-3.65 m
LOCATION:	S-Abutment of Bridge 10, Nuhuisse	Ground Elevation, m-MSL:	601.323 m	Starting Date:	29/5/2011
CLIENT:	Chodai & EJEC	Max.Drilling Depth:	14.00 m	Finishing Date:	30/5/2011

DEPTH (m)	GRAPHIC LOG	SOIL DESCRIPTION	SAMPLING METHOD	SAMPLE NO.	RECOVERY (cm)	Total Unit Weight (Ton/m³)	Plastic Limit / Natural Water Content / Liquid Limit (%)	Specific Gravity	SPT Blow Count (Blow/ft)
		0.0-3.0 m, CL, sandy CLAY, 44% fine-medium sand, low plasticity, very stiff, dark brown, *Natural Crust*	WO						
1			WO						
			SS	1	40				16
2			WO						
			SS	2	40		15	2.6	18
3		3.0-8.0 m, SP-SM, SAND with silt, 11% silt, fine-medium subangular sand with little coarse, clean, poorly graded, medium-very dense, traces of rock texture, brown-yellowish brown-greenish gray, *Granitic Residual Soil*	WO						
			SS	3	24				22
4			WO						
			SS	4	25		13	2.7	22
5			WO						
			SS	5	22				50/24
6			WO						
			SS	6	18				50/23
7			WO						
			SS	7	10				50/11
8			WO						
		8.0-14.0 m, granitic GNEISS, coarse grained, highly weathered, hard, broken into pieces with iron oxide coated generally, traces of continuous layering, whitish brown-white, *Rock Basement*							50/2
			C1	10	0				
9			C2	10	0				
10			C4	10	0				
11			C4	10	0				
12			C5	20	0				
13			C6	40	0				
			C7	40	0				
14		**End of Borehole @ 14.0 m**							

Coring: 2nd Col = %Recovery, 3rd Col = %RQD

Loss

Lab, WO - Wash , SS-Split Spoon , C - Coring

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BORING LOG

BOREHOLE: BH10-2
SHEET: 1 OF 1

PROJECT:	Soil Test for Ile-Cuamba Bridges	Coordinates:	S 8319957.221 E 246640.890	Water Level	-0.70 m
LOCATION:	N-Abutment of Bridge 10, Nuhuissa	Ground Elevation, m-MSL:	601.872 m	Starting Date	30/5/2011
CLIENT:	Chodai & EJEC	Max.Drilling Depth	4.30 m	Finishing Date	31/5/2011

DEPTH (m)	GRAPHIC LOG	SOIL DESCRIPTION	SAMPLING METHOD	SAMPLE NO.	RECOVERY (cm)	Total Unit Weight (Ton/m³) 1.2 1.4 1.6	Plastic Limit / Natural Water Content / Liquid Limit (%) 30 60 90 120	Specific Gravity 2.4 2.6 2.8	SPT Blow Count (Blow/ft) 10 20 30 40
		0.0-1.3 m, ML SILT, non plasticity, medium dense, dark brown, *Natural Crust*	WO						
			WO						
1		1.3-4.3 m, granitic GNEISS, coarse grained, moderately-highly weathered, hard, broken into pieces with iron oxide coated generally, traces of some joints, continuous layering & pink quartz vein, brownish white-white, lowest 3 cm is dark greenish gray rock, *Rock Basement*	SS	1	Loss				50/2
2	1.3-2.9		C1	10	0				
			C2	0	0				
3			C3	20	0				
4			C4	0	0				
		End of Borehole @ 4.3 m							
		Coring: 2nd Col = %Recovery, 3rd Col = %RQD							

Loss
Lab, WO - Wash , SS-Split Spoon , C - Coring

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BORING LOG

BOREHOLE: BH10-3
SHEET: 1 OF 1

PROJECT:	Soil Test for Ile-Cuamba Bridges	Coordinates: S 8319948.254 E 246667.476	Water Level: -1.20 m
LOCATION:	S-Riverside of Bridge 10, Nuhuasse	Ground Elevation, m-MSL: 597.488 m	Starting Date: 29/5/2011
CLIENT:	Chodai & EJEC	Max.Drilling Depth: 5.50 m	Finishing Date: 29/5/2011

DEPTH (m)	GRAPHIC LOG	SOIL DESCRIPTION	SAMPLING METHOD	SAMPLE NO.	RECOVERY (cm)	Total Unit Weight (Ton/m³) 1.2 1.4 1.6	Plastic Limit / Natural Water Content / Liquid Limit (%) 30 60 90 120	Specific Gravity 2.4 2.6 2.8	SPT Blow Count (Blow/ft) 10 20 30 40	
		0.0-1.0 m, SM, silty SAND, slight plasticity, very dense, blackish brown, *River Sand*	WO							
			WO							
1		1.0-4.0 m, SM, silty SAND with gravel, 15-19% silt, 15-19% fine subangular gravel of 2-3 mm with random 1 cm max sized of brown quartz, fine-coarse subangular sand, very dense, traces of rock texture, yellowish-light brown & greenish gray, *Granitic Residual Soil*	SS	1	40		● 6	● 2.7		● 50/13
			WO							
2			SS	2	10					● 50/12
			WO							
3			SS	3	13		● 10	● 2.6		● 50/12
			WO							
4		4.0-5.5 m, QUARTZ dyke within granitic GNEISS basement	SS	4	2					● 50/#
			WO							
5			SS	5	Loss					● 50/4
		End of Borehole @ 5.5 m								
		Coring: 2nd Col = %Recovery, 3rd Col = %RQD								

Loss
Lab, WO - Wash , SS-Split Spoon , C - Coring

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BORING LOG

BOREHOLE: BH11-1
SHEET: 1 OF 1

PROJECT:	Soil Test for Ile-Cuamba Bridges	Coordinates:	S: 8322257.471 E: 242682.659	Water Level:	-5.50 m
LOCATION:	S-Abutment of Bridge 11, Lurio	Ground Elevation, m-MSL:	582.700 m	Starting Date:	6/6/2011
CLIENT:	Chodai & EJEC	Max.Drilling Depth:	15.50 m	Finishing Date:	7/6/2011

DEPTH (m)	GRAPHIC LOG	SOIL DESCRIPTION	SAMPLING METHOD	SAMPLE NO.	RECOVERY (cm)	Total Unit Weight (Ton/m³)	Plastic Limit / Natural Water Content / Liquid Limit (%)	Specific Gravity	SPT Blow Count (Blow/ft)
		0.0-5.0 m, SM, silty SAND, 32% silt, fine subangular sand with little medium, medium dense, brown, *River Sand*	WO						
1			WO						
			SS	1	45				15
2			WO						
			SS	2	45				11
3			WO						
			SS	3	27		7	2.8	14
4			WO						
			SS	4	30				16
5			WO						
		5.0-6.0 m, SP-SM, SAND with silt, 6% silt, fine-medium subangular sand, poorly graded, loose, brown, *River Sand*	SS	5	22		16	2.5	8
6			WO						
		6.0-7.0 m, SP-SM, SAND wt gravel, 41% fine-coarse gravel of 1.0-3.5 sized, fine-coarse subang sand, poor graded, medium dense, brown, *River Sand & Gravel*	SS	6	22		4	2.6	27
7			WO						
		7.0-12.0 m, SM, silty SAND, 43% silt, fine sand, medium dense-dense, pale reddish brown-greenish gray, *Granitic Residual Soil*	SS	7	26				25
8			WO						
			SS	8	25				35
9			WO						
			SS	9	22				20
10			WO						
			SS	10	20		17	2.7	19
11			WO						
			SS	11	10				31
12			WO						
		12.0-14.0 m, SM, silty SAND, 19% silt, fin-medium subangular sand, dense, greenish gray-greenish brown, *Granitic Residual Soil*	SS	12	15		12	2.7	43
13			WO						
			SS	13	10				30
14			WO						
		14.0-15.5 m, SM, silty SAND, 30% silt, fine subangular sand, very dense, light brown, *Granitic Residual Soil*	SS	14	4				50/8
15			WO						
			SS	15	4				50/7

End of Borehole @ 15.5 m

Coring: 2nd Col = %Recovery, 3rd Col = %RQD

Loss

Lab, WO - Wash , SS-Split Spoon , C - Coring

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BORING LOG

BOREHOLE: BH11-2
SHEET: 1 OF 1

PROJECT:	Soil Test for Ile-Cuamba Bridges	Coordinates: S 8322307.451 E 242605.931	Water Level: -2.00 m
LOCATION:	N-Abutment of Bridge 11, Lurio	Ground Elevation, m-MSL: 580.200 m	Starting Date: 2/6/2011
CLIENT:	Chodai & EJEC	Max.Drilling Depth: 10.50 m	Finishing Date: 3/6/2011

DEPTH (m)	GRAPHIC LOG	SOIL DESCRIPTION	SAMPLING METHOD	SAMPLE NO.	RECOVERY (cm)	Total Unit Weight (Ton/m³)	Plastic Limit / Natural Water Content / Liquid Limit (%)	Specific Gravity	SPT Blow Count (Blow/ft)
		0.0-3.0 m, CL, sandy CLAY,18% fine sand, medium plasticity, medium stiff, dark brown-dark grayish brown, *Alluvial Clay*	WO						
1			WO						
			SS	1	45				5
2			WO						
			SS	2	45		31	2.5	6
3		3.0-4.0 m, SM, silty SAND, 43% silt, fine subangular sand, loose, gray-yellowish brown, *River Sand*	WO						
			SS	3	45		23	2.6	8
4		4.0-5.0 m, SM, silty SAND, 17% silt, fine-coarse subangular sand with some fine gravel, medium dense, yellowish brown, *River Sand*	WO						
			SS	4	35		14	2.7	14
5		5.0-7.0 m, SM, silty SAND, 17-26% silt, fine-medium subangular sand, slight plasticity, medium-very dense, traces of rock texture, pale brownish gray-grayish green-light brown, *Granitic Residual Soil*	WO						
			SS	5	32		16	2.6	25
6			WO						
			SS	6	18				50/II
7		7.0-10.5 m, SM, silty SAND, 17% silt, fine-medium sand, traces of shinny decomposed muscovite, dense-very dense, brownish black, *Granitic Residual Soil*	WO						
			SS	7	28				35
8			WO						
			SS	8	27				48
9			WO						
			SS	9	40				50/24
10			WO						
			SS	10	33		25	2.7	50/27
		End of Borehole @ 10.5 m							
		Coring: 2nd Col = %Recovery, 3rd Col = %RQD							

Loss

Lab, WO - Wash , SS-Split Spoon , C - Coring

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BORING LOG

BOREHOLE: BH11-3
SHEET: 1 OF 1

PROJECT:	Soil Test for Ile-Cuamba Bridges	Coordinates:	S: 8322262.929 E: 242674.280	Water Level:	4.50 m
LOCATION:	S-Intermediate of Bridge 11, Lurio	Ground Elevation, m-MSL:	582.300 m	Starting Date:	5/6/2011
CLIENT:	Chodai & EJEC	Max.Drilling Depth:	15.00 m	Finishing Date:	6/6/2011

DEPTH (m)	GRAPHIC LOG	SOIL DESCRIPTION	SAMPLING METHOD	SAMPLE NO	RECOVERY (cm)	Total Unit Weight (Ton/m³) (1.6 1.8 2.0)	Plastic Limit / Natural Water Content / Liquid Limit (30 60 90 120)	Specific Gravity (2.4 2.6 2.8)	SPT Blow Count (Blow/ft) (10 20 30 40)
		0.0-4.0 m, SM, silty SAND, 15-30% silt, fine subangular sand, loose, brown, *River Sand*	WO						
1			WO						
			SS	1	42				5
2			WO						
			SS	2	35				9
3			WO						
			SS	3	25				10
4			WO						
		4.0-5.0 m, SP-SM, SAND with silt, 10% silt, fine-coarse subangular sand of quartz mostly, poorly graded, medium dense, brown, *River Sand*	SS	4	20		9	2.8	20
5			WO						
		5.0-11.0 m, SC, clayey SAND, 44-46% silt & clay, fine sand, slight plasticity, medium dense, greenish gray-greenish brown, *Granitic Residual Soil*	SS	5	16				12
6			WO						
			SS	6	30	2.1	20	2.6	13
7			WO						
			SS	7	45				20
8			WO						
			SS	8	45				16
9			WO						
			SS	9	45				21
10			WO						
			SS	10	45	2.1	20	2.6	20
11			WO						
		11.0-14.0 m, SM, silty SAND, 15% silt, fine-medium sand with little coarse, traces of shinny decomposed muscovite & rock texture, dense-very dense, greenish gray-light brown, *Granitic Residual Soil*	SS	11	40		13	2.6	31
12			WO						
			SS	12	20				50/13
13			WO						
			SS	13	5				50/10
14			WO						
		14.0-15.0 m, granitic GNEISS basement	SS	14	Loss				50/0
15			C1	Loss					
		End of Borehole @ 15.0 m	SS	15	Loss				50/0
		Coring: 2nd Col = %Recovery, 3rd Col = %RQD							

Loss
Lab, WO - Wash , SS-Split Spoon , C - Coring

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BORING LOG

BOREHOLE: BH11-4
SHEET: 1 OF 1

PROJECT:	Soil Test for Ile-Cuamba Bridges	Coordinates: S: 8322301.993 E: 242614.310	Water Level: -1.40 m
LOCATION:	N-Intermediate of Bridge 11, Lurio	Ground Elevation, m-MSL: 579.800 m	Starting Date: 1/6/2011
CLIENT:	Chodai & EJEC	Max.Drilling Depth: 10.50 m	Finishing Date: 2/6/2011

DEPTH (m)	GRAPHIC LOG	SOIL DESCRIPTION	SAMPLING METHOD	SAMPLE NO.	RECOVERY (cm)	Total Unit Weight (Ton/m³)	Plastic Limit / Natural Water Content / Liquid Limit (%)	Specific Gravity	SPT Blow Count (Blow/ft)
		0.0-3.0 m, CL, sandy CLAY, 31% fine sand with little medium, medium plasticity, medium stiff, dark grayish brown, *Alluvial Clay*	WO						
1			WO						
			SS	1	45				5
2			WO						
			SS	2	45		32	2.5	5
3			WO						
		3.0-4.0 m, ML, sandy SILT, 46% fine-medium subangular sand, loose, yellowish-grayish brown, *River Silt*	SS	3	30		17	2.7	8
4			WO						
		4.0-5.0 m, SM, silty SAND, 15% silt, fine-medium sand, medium dense, brown-grayish green, *Granitic Residual Soil*	SS	4	40		16	2.9	20
5			WO						
		5.0-6.0 m, SM, silty SAND with clay, 20% silt, 10% clay, randomgravel, fine-coarse subangular sand, medium dense, yellowish-grayish brown, *Granitic Residual Soil*	SS	5	40				28
6			WO						
		6.0-7.0 m, SM, silty SAND, 27% silt, random coarse gravel, fine-medium subangular sand, very dense, yellowish brown-greenish gray, *Granitic Residual Soil*	SS	6	36		15	2.6	50/29
7			WO						
		7.0-10.5 m, CL, sandy CLAY, 49% fine subangular sand, traces of shinny decomposed muscovite, medium plasticity, hard, brownish black, *Granitic Residual Soil*	SS	7	33				50/30
8			WO						
			SS	8	27	2.1	18	2.6	50/13
9			WO						
			SS	9	10				50/10
10			WO						
			SS	10	7				50/8
		End of Borehole @ 10.5 m							
		Coring: 2nd Col = %Recovery, 3rd Col = %RQD							

Loss

Lab, WO - Wash , SS-Split Spoon , C - Coring

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BORING LOG

BOREHOLE: BH11-5
SHEET: 1 OF 1

PROJECT:	Soil Test for Ile-Cuamba Bridges	Coordinates:	S: 8322271.115 E: 242661.712	Water Level:	-3.50 m
LOCATION:	S-Riverside of Bridge 11, Lurio	Ground Elevation, m-MSL:	581.100 m	Starting Date:	3/6/2011
CLIENT:	Chodai & EJEC	Max.Drilling Depth:	13.50 m	Finishing Date:	4/6/2011

DEPTH (m)	GRAPHIC LOG	SOIL DESCRIPTION	SAMPLING METHOD	SAMPLE NO	RECOVERY (cm)	Total Unit Weight (Ton/m³)	Plastic Limit / Natural Water Content / Liquid Limit (%)	Specific Gravity	SPT Blow Count (Blow/ft)
		0.0-2.0 m, ML, SILT, slight plasticity, loose, dark grayish brown, *River Silt*	WO						
1			SS	1	33				6
			WO						
2		2.0-3.0 m, SM, silty SAND, 32% silt, fine sand, loose, brown, *River Sand*	SS	2	33		16	2.7	4
			WO						
3		3.0-4.0 m, SM, silty SAND with clay, 40% silt, 10% clay, fine sand, very loose, brown, *River Sand*	SS	3	33				2
			WO						
4		4.0-5.0 m, SM, silty SAND, 25% silt, fine-medium subangular sand, medium dense, dark yellowish brown, *River Sand*	SS	4	26		14	2.7	12
			WO						
5		5.0-9.0 m, CL, sandy CLAY, 23-48% fine sand with little medium, low plasticity, stiff, greenish gray-greenish brown-brown, *Granitic Residual Soil*	SS	5	34		25	2.6	10
			WO						
6			SS	6	45				17
			WO						
7			SS	7	45				14
			WO						
8			SS	8	45	2.0	29	2.6	17
			WO						
9		9.0-13.0 m, SP-SM, silty SAND with silt, 11% silt, 28% fine subangular gravel of 1 cm max sized, fine-coarse subangular sand, traces rock texture, very dense, pale brown, *Granitic Residual Soil*	SS	9	9		9	2.7	50/9
			WO						
10			SS	10	6				50/10
			WO						
11			SS	11	5				50/7
			WO						
12			SS	12	4				50/8
			WO						
13		13.0-13.5 m, granitic GNEISS basement	SS	13	Loss				50/2

End of Borehole @ 13.5 m

Coring: 2nd Col = %Recovery, 3rd Col = %RQD

Loss

Lab, WO - Wash , SS-Split Spoon , C - Coring

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BORING LOG

BOREHOLE: BH11-6
SHEET: 1 OF 1

PROJECT:	Soil Test for Ile-Cuamba Bridges	Coordinates:	S: 8322290.531 E: 242631.906	Water Level:	-1.00 m
LOCATION:	N-Riverside of Bridge 11, Lurio	Ground Elevation, m-MSL:	578.700 m	Starting Date:	31/5/2011
CLIENT:	Chodai & EJEC	Max.Drilling Depth:	11.00 m	Finishing Date:	1/6/2011

DEPTH (m)	GRAPHIC LOG	SOIL DESCRIPTION	SAMPLING METHOD	SAMPLE NO.	RECOVERY (cm)	Total Unit Weight (Ton/m³)	Plastic Limit / Natural Water Content / Liquid Limit (%)	Specific Gravity	SPT Blow Count (Blow/ft)
		0.0-1.0 m, CH, CLAY, high plasticity, medium stiff, dark grayish brown, *Alluvial Clay*	WO						
			WO						
1		1.0-2.0 m, SC, clayey SAND, 44% silt & clay, fine subangular sand, loose, yellowish brown, *River Sand*	SS	1	45		31	2.6	5
			WO						
2		2.0-3.0 m, ML, sandy SILT, 15% silt, high plasticity, soft, dark greenish gray, *River Silt*	ss/ud	2/1	45/60	1.8	40	2.5	3
			WO						
3		3.0-4.0 m, SW-SM, SAND with silt, 13% silt, fine-medium subangular sand, loose, well graded, yellowish brown, *River Sand*	SS	3	27		15	2.8	4
			WO						
4		4.0-8.2 m, SM, silty SAND, 15-23% silt with random fine-coarse subangular pink quartz gravel of 3 cm max sized, fine-medium subangular sand with little coarse, medium-very dense, yellowish brown-greenish brown-greenish gray, *Granitic Residual Soil*	SS	4	25		13	2.8	27
			WO						
5			SS	5	13		10	2.7	50/23
			WO						
6			SS	6	7				50/7
			WO						
7			SS	7	10				50/10
			WO						
8	8.2-8.5	8.2-11.0 m, granitic GNEISS, coarse grained, moderately-highly weathered, hard, broken into pieces with iron oxide coated generally, traces of some discontinuous layering, brownish white, *Rock Basement*	C1	43	Loss				50/6
9			C2	10	0				
10	8.9-9.5		C3	10	Loss				
			C4	57	Loss				
11		**End of Borehole @ 11.0 m**							

Coring: 2nd Col = %Recovery, 3rd Col = %RQD

Loss

Lab, WO - Wash , SS-Split Spoon , C - Coring

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BORING LOG

BOREHOLE: BH12-1
SHEET: 1 OF 1

PROJECT:	Soil Test for Ile-Cuamba Bridges	Coordinates:	S: 8327687.029 E: 244541.111	Water Level:	-3.50 m
LOCATION:	S-Abutment of Bridge 12, Muassa	Ground Elevation, m-MSL:	581.052 m	Starting Date:	8/6/2011
CLIENT:	Chodai & EJEC	Max.Drilling Depth:	9.00 m	Finishing Date:	10/6/2011

DEPTH (m)	GRAPHIC LOG	SOIL DESCRIPTION	SAMPLING METHOD	SAMPLE NO	RECOVERY (cm)	Total Unit Weight (Ton/m³)	Plastic Limit / Natural Water Content / Liquid Limit (%)	Specific Gravity	SPT Blow Count (Blow/ft)
		0.0-1.5 m, SM, silty SAND, 30% silt, very fine sand, loose, blackish brown, *Crust*	WO						
1			WO						
			SS	1	35				9
		1.5-4.3 m, SM, silty SAND, 20% silt, random fine subangular gravel of 1 cm max sized, fine-medium subangular sand, traces of rock texture & decomposed felspar into sand, medium-very dense, yellowish gray-pale grayish brown, *Granitic Residual Soil*	WO						
2			SS	2	38				22
			WO						
3			SS	3	26		10	2.7	50/23
			WO						
4			SS	4	10				50/14
		4.3-9.0 m, granitic GNEISS, coarse grained, moderately-highly weathered, hard, brownish white with some dissipated gray minerals. *Rock Basement*	C1	50	0				
5			C2	10	0				
			C3	17	0				
6			SS	6	33		29	2.8	50/28
			WO						
7			SS	7	2				50/5
			WO						
8			SS	8	Loss				50/0
			C4	Loss					
9		**End of Borehole @ 9.0 m**							

Coring: 2nd Col = %Recovery, 3rd Col = %RQD

Loss
Lab, WO - Wash , SS-Split Spoon , C - Coring

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BORING LOG

BOREHOLE: BH12-2
SHEET: 1 OF 1

PROJECT:	Soil Test for Ile-Cuamba Bridges	Coordinates: S: 8527708.848 E: 244556.816	Water Level: -0.80 m
LOCATION:	N-Abutment of Bridge 12, Muassi	Ground Elevation, m-MSL: 581.356 m	Starting Date: 8/6/2011
CLIENT:	Chodai & EJEC	Max.Drilling Depth: 6.70 m	Finishing Date: 9/6/2011

DEPTH (m)	GRAPHIC LOG	SOIL DESCRIPTION	SAMPLING METHOD	SAMPLE NO.	RECOVERY (cm)	Total Unit Weight (Ton/m³) 1.2 1.4 1.6	Plastic Limit / Natural Water Content / Liquid Limit (%) 30 60 90 120	Specific Gravity 2.4 2.6 2.8	SPT Blow Count (Blow/ft) 10 20 30 40	
		0.0-2.5 m. SM, silty SAND, 26% silt with random fine subangular quartz gravel of 1.5 cm max sized, fine-coarse subangular sand of decomposed feldspar mostly, very dense, traces of rock texture, pale grayish-whitish brown, *Granitic Residual Soil*	WO							
1			WO							
			SS	1	40					50/27
2			WO							
			SS	2	26		12	2.6		50/11
3		2.5-5.2 m. granitic GNEISS, coarse grained, moderately-highly weathered, hard, broken into pieces generally, traces of continuous layering, pale brownish white, *Rock Basement*	C1	33	0					
			C2	Loss						
4			C3	36	22					
			SS	4	23		12	2.7		50/13
5			C4	Loss						
		5.2-6.0 m. granitic GNEISS, coars grained, moderately-highly weathered, brittle-hard, broken into pieces with iron oxide coated, washable partly into sand, greenish gray, *Rock Basement*	SS	5	10					50/15
6			C5	32	0					
			SS	6	5					50/8
7			C6	Loss						

End of Borehole @ 6.7 m

Coring: 2nd Col = %Recovery, 3rd Col = %RQD

Loss

Lab, WO - Wash , SS-Split Spoon , C - Coring

BKS Global Mozambique Lda

BORING LOG

BOREHOLE: BH13-1
SHEET: 1 OF 1

PROJECT:	Soil Test for Ile-Cuamba Bridges	Coordinates:	S: 8359528.491 E: 235113.340	Water Level:	-1.80 m
LOCATION:	S-Abutment of Bridge 13, Namutimbula	Ground Elevation, m-MSL:	562.700 m	Starting Date:	16/6/2011
CLIENT:	Chodai & EJEC	Max.Drilling Depth:	8.30 m	Finishing Date:	16/6/2011

DEPTH (m)	GRAPHIC LOG	SOIL DESCRIPTION	SAMPLING METHOD	SAMPLE NO.	RECOVERY (cm)	Total Unit Weight (Ton/m³)	Plastic Limit / Natural Water Content / Liquid Limit (%)	Specific Gravity	SPT Blow Count (Blow/ft)
		0.0-1.0 m, CH, silty CLAY, 10% silt, medium-high plasticity, very soft, grayish brown. *River Clay*	WO						
1			WO						
		1.0-5.0 m, SM, silty SAND, 10-20% silt, very fine-fine-medium subangular sand, very loose-loose, dark grayish brown. *River Sand*	SS	1	41				2
2			WO						
			SS	2	25				3
3		1.0-5.0 m, SM, silty SAND, 24-26% silt, fine subangular sand with little medium, very loose-loose, dark grayish brown. *River Sand*	WO						
			SS	3	25		17	2.7	7
4			WO						
			SS	4	35		20	2.6	13
5			WO						
		5.0-5.3, SP, poorly graded SAND. *Residual Soil*	SS	5	19		14	2.7	50/4
6		5.3-8.3 m, granitic GNEISS, medium-coarse grained, slight weathered-fresh, hard, pale gray. *Rock Basement*	C1	40	82				
7	6.3-7.8	6.3-7.8 m, expected shear zone within granitic GNEISS	C2	60	0				
8		7.8-8.3m, high weather, brittle, jointed, brownish white	C5	50	10				

End of Borehole @ 8.3 m

Coring: 2nd Col = %Recovery, 3rd Col = %RQD

Loss

Lab, WO - Wash , SS-Split Spoon , C - Coring

BKS Global Mozambique Lda

BORING LOG

BOREHOLE: BH13-2
SHEET: 1 OF 1

PROJECT:	Soil Test for Ile-Cuamba Bridges	Coordinates: S 8359569.077 E 235112.158	Water Level: -1.50 m
LOCATION:	N-Abutment of Bridge 13, Namutimbúa	Ground Elevation, m-MSL: 564.300 m	Starting Date: 11/6/2011
CLIENT:	Chodai & EJEC	Max.Drilling Depth: 10.00 m	Finishing Date: 15/6/2011

DEPTH (m)	GRAPHIC LOG	SOIL DESCRIPTION	SAMPLING METHOD	SAMPLE NO	RECOVERY (cm)	Total Unit Weight (Ton/m³)	Plastic Limit / Natural Water Content / Liquid Limit (%)	Specific Gravity	SPT Blow Count (Blow/ft)
		0.0-3.0 m. SW-SM, SAND with silt, 7% silt, fine-coarse subangular sand, very loose, well graded, dark yellowish brown, *River Sand*	WO						
1			WO						
			SS	1	10				4
2			WO						
			SS	2	10		10	2.7	8
3		3.0-5.0 m. SM, silty SAND, 18-20% silt, fine-coarse subangular sand with some fine gravel, medium-very dense, traces of rock texture, brown-grayish & greenish brown, *Granitic Residual Soil*	WO						
			SS	3	26	2.0	12	2.6	17
4			WO						
			SS	4	33		14	2.7	50/29
5		5.0-10.0 m. granitic GNEISS, coarse grained, fresh, hard-very hard, traces of continuous layering, pale-dark greenish gray, *Rock Basement*	WO						
			C1	100	100				50/0
6			C2	100	100				
7			C3	100	100				
8			C4	60	100				
9			C5	94	100				
10		**End of Borehole @ 10.0 m**							

Coring: 2nd Col = %Recovery, 3rd Col = %RQD

Loss

Lab, WO - Wash , SS-Split Spoon , C - Coring

BKS Global Mozambique Lda

BORING LOG

BOREHOLE: BH13-3
SHEET: 1 OF 1

PROJECT:	Soil Test for Ile-Cuamba Bridges	Coordinates: S 8359554.176 E 235112.592	Water Level: -1.70 m
LOCATION:	N-Riverside of Bridge 13, Namutimbula	Ground Elevation, m-MSL: 564.120 m	Starting Date: 11/6/2011
CLIENT:	Chodai & EJEC	Max.Drilling Depth: 9.80 m	Finishing Date: 15/6/2011

DEPTH (m)	GRAPHIC LOG	SOIL DESCRIPTION	SAMPLING METHOD	SAMPLE NO.	RECOVERY (cm)	Total Unit Weight (Ton/m³)	Plastic Limit / Natural Water Content / Liquid Limit (%)	Specific Gravity	SPT Blow Count (Blow/ft)
		0.0-2.0 m, SM, silty SAND, 30% silt, fine-very fine sand, very loose, dark brownish gray, *River Sand*	WO						
1			WO						
			SS	1	30				2
			WO						
2		2.0-3.0 m, SC-CL, clayey SAND wt gravel-sandy CLAY, 19-68% silt&clay, nil-28% gravel, fine-coarse sand, med-high plastic, loose, brownish gray, *River Sand&Clay*	ssuo	2/1	30/50		26	2.5	4
3		3.0-4.0 m, SM, silty SAND, 30% silt, fine sand with some medium, very loose, dark brownish gray, *River Sand*	WO						
			SS	3	33		18	2.6	7
4		4.0-4.8 m, ML, sandy SILT, 41% fine sand with little medium, very dense, traces of rock texture, greenish gray & brown, *Granitic Residual Soil*	WO						
			SS	4	27		11	2.7	50/30
5		4.8-9.8 m, granitic GNEISS, coarse grained, moderately weathered, brittle, in brown & broken into pieces @ top 1st meter then fresh throughly, hard-very hard, jointed with iron oxide coated, traces of continuous layering, greenish gray, *Rock Basement*	WO						
			C1	12	0				
6			C2	14					50/0
			C3	60	76				
7			C4	100					
			C5	100	74				
8			C6	80					
			C7	100	30				
9			C8	100	100				
10		**End of Borehole @ 9.8 m**							

Coring: 2nd Col = %Recovery, 3rd Col = %RQD

Loss

Lab, WO - Wash , SS-Split Spoon , C - Coring

6.4 地形測量結果

本調査では、計画道路の基本道路線形、橋梁位置を検討するために現地の地物状況および河床高の調査を実施した。調査開始時点で道路線形・工事範囲が確定していなかったため、調査範囲および標高測量地点数が不足しないように配慮した。これらの測量にはトータルステーション・GPS 測量機器を使用して実施した。

対象橋梁の両岸に基準となる仮ベンチマークを調査団の指示のもと設置した。ベンチマークは見通しが良く、乱される可能性の低い場所に設置した。

表 6.4　ベンチマーク一覧

Bridge Number	Point	Final Values		
		Southing	Easting	Elevation
		(m)	(m)	(m)
1	BM1-1	8,208,758.250	301,082.901	339.201
	BM1-2	8,209,126.562	300,938.452	334.040
2	BM2-1	8,236,756.509	300,105.666	420.082
	BM2-2	8,237,012.705	299,978.863	414.842
3	BM3-1	8,251,683.435	299,634.002	504.018
	BM3-2	8,251,809.000	299,346.000	501.000
4	BM4-1	8,252,657.551	297,149.195	511.805
	BM4-2	8,252,811.000	296,949.000	514.000
5	BM5-1	8,265,496.305	295,224.299	574.552
	BM5-2	8,265,740.722	295,194.509	571.881
6	BM6-1	8,289,150.067	279,229.966	626.136
	BM6-2	8,289,276.091	279,021.555	628.969
7	BM7-1	8,295,394.802	272,253.853	704.055
	BM7-2	8,295,543.336	272,054.566	708.072
8	BM8-1	8,308,059.837	259,725.954	724.576
	BM8-2	8,308,301.000	259,794.000	726.000
9	BM9-1	8,308,596.521	259,898.673	716.590
	BM9-2	8,308,915.000	259,969.000	715.000
10	BM10-1	8,319,906.166	246,787.736	608.379
	BM10-2	8,320,009.000	246,588.000	606.000
11	BM11-1	8,322,235.518	242,704.340	585.424
	BM11-2	8,322,428.000	242,459.000	587.000
12	BM12-1	8,327,597.387	244,506.824	582.342
	BM12-2	8,327,817.000	244,625.000	586.000
13	BM13-1	8,359,344.746	235,112.189	566.854
	BM13-2	8,359,761.000	235,133.000	567.000

ベンチマーク詳細

CONTROL POINT DESCRIPTION			POINT No.	BM.1-1	
			DATE	27/04/2011	
PROJECT	BRIDGE 1		LOCATION	MOZAMBIUQE	
ZONE 37 PROJECTION U.T.M.			VERTICAL DATUM (M.S.L)		
SCALE FACTOR			HORRIZONTAL DATUM	WGS1984	
CO - ORDINATE			GEOGRAPHIC CO - ORDINATE		
POINT	SOUTHING	EASTING	LATITUDE	LONGITUDE	ELEVATION
BM.1-1	8208758.250	301082.901			339.201

DESCRIPTION OF MARK

BOLT ON CONCRETE

DIAGRAMS

LOCATION

RP1

RP2

RP3

GENERAL INFORMATION

	AZ	DISTANCE	DESC
RP-1	161-17-26	2.906	sign pole
RP-2	339-23-15	192.694	bridge
RP-3	340-54-21	192.820	bridge

CONTROL POINT DESCRIPTION			POINT No.	BM.1-2	
			DATE	27/04/2011	
PROJECT	BRIDGE 1		LOCATION	MOZAMBIUQE	
ZONE 37 PROJECTION U.T.M.			VERTICAL DATUM (M.S.L)		
SCALE FACTOR			HORRIZONTAL DATUM	WGS1984	
CO - ORDINATE			GEOGRAPHIC CO - ORDINATE		
POINT	SOUTHING	EASTING	LATITUDE	LONGITUDE	ELEVATION
BM.1-2	8209126.562	300938.452			334.040

DESCRIPTION OF MARK

BOLT ON CONCRETE

DIAGRAMS

LOCATION

RP1

RP2

RP3

GENERAL INFORMATION

	AZ	DISTANCE	DESC
RP-1	341-28-47	137.072	sign pole
RP-2	154-48-54	111.045	bridge
RP-3	157-28-12	110.827	bridge

CONTROL POINT DESCRIPTION			POINT No.	BM.2-1	
			DATE	27/04/2011	
PROJECT	BRIDGE 2		LOCATION	MOZAMBIUQE	
ZONE 37 PROJECTION U.T.M.			VERTICAL DATUM (M.S.L)		
SCALE FACTOR			HORRIZONTAL DATUM	WGS1984	
CO - ORDINATE			GEOGRAPHIC CO - ORDINATE		
POINT	SOUTHING	EASTING	LATITUDE	LONGITUDE	ELEVATION
BM.2-1	8236756.509	300105.666			420.082

DESCRIPTION OF MARK

BOLT ON CONCRETE

DIAGRAMS

LOCATION

RP1

RP2

RP3

GENERAL INFORMATION

	AZ	DISTANCE	DESC
RP-1	340-50-58	116.444	guard rail
RP-2	341-44-48	142.131	bridge
RP-3	343-43-28	141.009	bridge

CONTROL POINT DESCRIPTION			POINT No.	BM.2-2	
			DATE	27/04/2011	
PROJECT	BRIDGE 2		LOCATION	MOZAMBIUQE	
ZONE 37 PROJECTION U.T.M.			VERTICAL DATUM (M.S.L)		
SCALE FACTOR			HORRIZONTAL DATUM	WGS1984	
CO - ORDINATE			GEOGRAPHIC CO - ORDINATE		
POINT	SOUTHING	EASTING	LATITUDE	LONGITUDE	ELEVATION
BM.2-2	8237012.705	299978.863			414.842

DESCRIPTION OF MARK

BOLT ON CONCRETE

DIAGRAMS

LOCATION

RP1

RP2

RP3

GENERAL INFORMATION

	AZ	DISTANCE	DESC
RP-1	151-59-43	54.861	guard rail
RP-2	153-26-21	79.194	bridge
RP-3	157-01-29	79.549	bridge

CONTROL POINT DESCRIPTION			POINT No.	BM.3-1	
			DATE	25/04/2011	
PROJECT	BRIDGE 3		LOCATION	MOZAMBIUQE	
ZONE 37 PROJECTION U.T.M.			VERTICAL DATUM (M.S.L)		
SCALE FACTOR			HORRIZONTAL DATUM	WGS1984	
CO - ORDINATE			GEOGRAPHIC CO - ORDINATE		
POINT	SOUTHING	EASTING	LATITUDE	LONGITUDE	ELEVATION
BM.3-1	8251683.435	299634.002			504.018

DESCRIPTION OF MARK

BOLT ON CONCRETE

DIAGRAMS

LOCATION

RP1

RP2

RP3

GENERAL INFORMATION

	AZ	DISTANCE	DESC
RP-1	118-42-56	3.563	sign Pole
RP-2	292-44-18	158.354	bridge
RP-3	294-31-36	158.586	bridge

CONTROL POINT DESCRIPTION			POINT No.	BM.3-2	
			DATE	25/04/2011	
PROJECT	BRIDGE 3		LOCATION	MOZAMBIUQE	
ZONE 37 PROJECTION U.T.M.			VERTICAL DATUM (M.S.L)		
SCALE FACTOR			HORRIZONTAL DATUM	WGS1984	
CO - ORDINATE			GEOGRAPHIC CO - ORDINATE		
POINT	SOUTHING	EASTING	LATITUDE	LONGITUDE	ELEVATION
BM.3-2	8251809.000	299346.000			501.000

DESCRIPTION OF MARK

BOLT ON CONCRETE

DIAGRAMS

LOCATION

RP1

RP2

RP3

GENERAL INFORMATION

	AZ	DISTANCE	DESC
RP-1	37-14-29	15.268	tree
RP-2	112-49-22	131.189	bridge
RP-3	114-59-55	131.456	bridge

CONTROL POINT DESCRIPTION			POINT No.	BM.4-1	
			DATE	23/04/2011	
PROJECT	BRIDGE 4		LOCATION	MOZAMBIQUE	
ZONE 37 PROJECTION U.T.M.			VERTICAL DATUM (M.S.L)		
SCALE FACTOR			HORRIZONTAL DATUM	WGS1984	
CO - ORDINATE			GEOGRAPHIC CO - ORDINATE		
POINT	SOUTHING	EASTING	LATITUDE	LONGITUDE	ELEVATION
BM.4-1	8252657.551	297149.195			511.805

DESCRIPTION OF MARK

BOLT ON CONCRETE

DIAGRAMS

LOCATION

RP1

RP2

RP3

GENERAL INFORMATION

	AZ	DISTANCE	DESC
RP-1	128-11-02	11.966	sign Pole
RP-2	307-18-13	96.163	bridge
RP-3	311-22-30	96.584	bridge

CONTROL POINT DESCRIPTION			POINT No.	BM.4-2	
			DATE	23/04/2011	
PROJECT	BRIDGE 4		LOCATION	MOZAMBIQUE	
ZONE 37 PROJECTION U.T.M.			VERTICAL DATUM (M.S.L)		
SCALE FACTOR			HORRIZONTAL DATUM	WGS1984	
CO - ORDINATE			GEOGRAPHIC CO - ORDINATE		
POINT	SOUTHING	EASTING	LATITUDE	LONGITUDE	ELEVATION
BM.4-2	8252811.000	296949.000			514.000

DESCRIPTION OF MARK

BOLT ON CONCRETE

DIAGRAMS

LOCATION

RP1

RP2

RP3

GENERAL INFORMATION

	AZ	DISTANCE	DESC
RP-1	299-01-46	19.610	sign Pole
RP-2	119-36-24	107.243	bridge
RP-3	123-17-19	107.627	bridge

CONTROL POINT DESCRIPTION			POINT No.	BM.5-1	
			DATE	23/04/2011	
PROJECT	BRIDGE 5		LOCATION	MOZAMBIUQE	
ZONE 37 PROJECTION U.T.M.			VERTICAL DATUM (M.S.L)		
SCALE FACTOR			HORRIZONTAL DATUM	WGS1984	
CO - ORDINATE			GEOGRAPHIC CO - ORDINATE		
POINT	SOUTHING	EASTING	LATITUDE	LONGITUDE	ELEVATION
BM.5-1	8265496.305	295224.299			574.552

DESCRIPTION OF MARK

BOLT ON CONCRETE

DIAGRAMS

LOCATION

RP1

RP2

RP3

GENERAL INFORMATION

	AZ	DISTANCE	DESC
RP-1	338-16-10	4.951	sign Pole
RP-2	344-17-01	124.253	bridge
RP-3	346-32-25	123.704	bridge

CONTROL POINT DESCRIPTION			POINT No.	BM.5-2	
			DATE	23/04/2011	
PROJECT	BRIDGE 5		LOCATION	MOZAMBIUQE	
ZONE 37 PROJECTION U.T.M.			VERTICAL DATUM (M.S.L)		
SCALE FACTOR			HORRIZONTAL DATUM	WGS1984	
CO - ORDINATE			GEOGRAPHIC CO - ORDINATE		
POINT	SOUTHING	EASTING	LATITUDE	LONGITUDE	ELEVATION
BM.5-2	8265740.722	295194.509			571.881

DESCRIPTION OF MARK

BOLT ON CONCRETE

DIAGRAMS

LOCATION

RP1

RP2

RP3

GENERAL INFORMATION

	AZ	DISTANCE	DESC
RP-1	203-03-51	5.376	sign Pole
RP-2	181-04-07	102.940	bridge
RP-3	183-46-51	103.880	bridge

CONTROL POINT DESCRIPTION			POINT No.	BM.6-1	
			DATE	4/5/2011	
PROJECT	BRIDGE 6		LOCATION	MOZAMBIUQE	
ZONE 37 PROJECTION U.T.M.			VERTICAL DATUM (M.S.L)		
SCALE FACTOR			HORRIZONTAL DATUM	WGS1984	
CO - ORDINATE			GEOGRAPHIC CO - ORDINATE		
POINT	SOUTHING	EASTING	LATITUDE	LONGITUDE	ELEVATION
BM.6-1	8289150.067	279229.966			626.136

DESCRIPTION OF MARK

BOLT ON CONCRETE

DIAGRAMS

LOCATION

RP1

RP2

RP3

GENERAL INFORMATION

	AZ	DISTANCE	DESC
RP-1	295-15-55	116.602	tank
RP-2	299-13-40	118.840	bridge
RP-3	301-36-11	118.969	bridge

CONTROL POINT DESCRIPTION			POINT No.	BM.6-2	
			DATE	4/5/2011	
PROJECT	BRIDGE 6		LOCATION	MOZAMBIUQE	
ZONE 37 PROJECTION U.T.M.			VERTICAL DATUM (M.S.L)		
SCALE FACTOR			HORRIZONTAL DATUM	WGS1984	
CO - ORDINATE			GEOGRAPHIC CO - ORDINATE		
POINT	SOUTHING	EASTING	LATITUDE	LONGITUDE	ELEVATION
BM.6-2	8289276.091	279021.555			628.969

DESCRIPTION OF MARK

BOLT ON CONCRETE

DIAGRAMS

LOCATION

RP1

RP2

RP3

GENERAL INFORMATION

	AZ	DISTANCE	DESC
RP-1	107-43-20	3.610	control point
RP-2	124-30-52	94.120	bridge
RP-3	121-31-33	93.669	bridge

CONTROL POINT DESCRIPTION			POINT No.	BM.7-1	
			DATE	4/5/2011	
PROJECT	BRIDGE 7		LOCATION	MOZAMBIUQE	
ZONE 37 PROJECTION U.T.M.			VERTICAL DATUM (M.S.L)		
SCALE FACTOR			HORRIZONTAL DATUM	WGS1984	
CO - ORDINATE			GEOGRAPHIC CO - ORDINATE		
POINT	SOUTHING	EASTING	LATITUDE	LONGITUDE	ELEVATION
BM.7-1	8295394.802	272253.8528			704.0552

DESCRIPTION OF MARK

BOLT ON CONCRETE

DIAGRAMS

LOCATION

RP1

RP2

RP3

GENERAL INFORMATION

	AZ	DISTANCE	DESC
RP-1	273-20-15	2.096	control point
RP-2	111-36-20	16.477	tree
RP-3	94-26-03	61.501	tree

CONTROL POINT DESCRIPTION			POINT No.	BM.7-2	
			DATE	4/5/2011	
PROJECT	BRIDGE 7		LOCATION	MOZAMBIUQE	
ZONE 37 PROJECTION U.T.M.			VERTICAL DATUM (M.S.L)		
SCALE FACTOR			HORRIZONTAL DATUM	WGS1984	
CO - ORDINATE			GEOGRAPHIC CO - ORDINATE		
POINT	SOUTHING	EASTING	LATITUDE	LONGITUDE	ELEVATION
BM.7-2	8295543.336	272054.5663			708.0721

DESCRIPTION OF MARK

BOLT ON CONCRETE

DIAGRAMS

LOCATION

RP1

RP2

RP3

GENERAL INFORMATION

	AZ	DISTANCE	DESC
RP-1	101-24-39	19.015	tree
RP-2	117-26-42	52.354	tree
RP-3	120-17-55	62.126	tree

CONTROL POINT DESCRIPTION			POINT No.	BM.8-1	
			DATE	5/24/2011	
PROJECT	BRIDGE 8		LOCATION	MOZAMBIUQE	
ZONE 37 PROJECTION U.T.M.			VERTICAL DATUM (M.S.L)		
SCALE FACTOR			HORRIZONTAL DATUM	WGS1984	
CO - ORDINATE			GEOGRAPHIC CO - ORDINATE		
POINT	SOUTHING	EASTING	LATITUDE	LONGITUDE	ELEVATION
BM.8-1	8308059.837	259725.954			724.576

DESCRIPTION OF MARK

BOLT ON CONCRETE

DIAGRAMS

LOCATION

RP1

RP2

RP3

GENERAL INFORMATION

	AZ	DISTANCE	DESC
RP-1	250-59-58	2.979	tree
RP-2	16-48-29	155.627	bridge
RP-3	18-38-17	155.809	bridge

CONTROL POINT DESCRIPTION			POINT No.	BM.8-2	
			DATE	5/24/2011	
PROJECT	BRIDGE 8		LOCATION	MOZAMBIUQE	
ZONE 37 PROJECTION U.T.M.			VERTICAL DATUM (M.S.L)		
SCALE FACTOR			HORRIZONTAL DATUM	WGS1984	
CO - ORDINATE			GEOGRAPHIC CO - ORDINATE		
POINT	SOUTHING	EASTING	LATITUDE	LONGITUDE	ELEVATION
BM.8-2	8308301	259794			726

DESCRIPTION OF MARK

BOLT ON CONCRETE

DIAGRAMS

LOCATION

RP1

RP2

RP3

GENERAL INFORMATION

	AZ	DISTANCE	DESC
RP-1	315-42-38	19.955	house
RP-2	190-10-47	80.118	bridge
RP-3	193-44-18	79.809	bridge

CONTROL POINT DESCRIPTION			POINT No.	BM.9-1	
			DATE	5/24/2011	
PROJECT	BRIDGE 9		LOCATION	MOZAMBIUQE	
ZONE 37 PROJECTION U.T.M.			VERTICAL DATUM (M.S.L)		
SCALE FACTOR			HORRIZONTAL DATUM	WGS1984	
CO - ORDINATE			GEOGRAPHIC CO - ORDINATE		
POINT	SOUTHING	EASTING	LATITUDE	LONGITUDE	ELEVATION
BM.9-1	8308596.521	259898.673			716.59

DESCRIPTION OF MARK

BOLT ON CONCRETE

DIAGRAMS

LOCATION

RP1

RP2

RP3

GENERAL INFORMATION

	AZ	DISTANCE	DESC
RP-1	227-01-22	27.864	tree
RP-2	12-27-59	174.040	bridge
RP-3	014-06-19	173.955	bridge

CONTROL POINT DESCRIPTION			POINT No.	BM.9-2	
			DATE	5/24/2011	
PROJECT	BRIDGE 9		LOCATION	MOZAMBIUQE	
ZONE 37 PROJECTION U.T.M.			VERTICAL DATUM (M.S.L)		
SCALE FACTOR			HORRIZONTAL DATUM	WGS1984	
CO - ORDINATE			GEOGRAPHIC CO - ORDINATE		
POINT	SOUTHING	EASTING	LATITUDE	LONGITUDE	ELEVATION
BM.9-2	8308915	259969			715

DESCRIPTION OF MARK

BOLT ON CONCRETE

DIAGRAMS

LOCATION

RP1

RP2

RP3

GENERAL INFORMATION

	AZ	DISTANCE	DESC
RP-1	279-59-35	20.815	house
RP-2	190-03-28	134.074	bridge
RP-3	192-09-55	133.805	bridge

CONTROL POINT DESCRIPTION			POINT No.	BM.10-1	
			DATE	5/24/2011	
PROJECT	BRIDGE 10		LOCATION	MOZAMBIUQE	
ZONE 37 PROJECTION U.T.M.			VERTICAL DATUM (M.S.L)		
SCALE FACTOR			HORRIZONTAL DATUM	WGS1984	
CO - ORDINATE			GEOGRAPHIC CO - ORDINATE		
POINT	SOUTHING	EASTING	LATITUDE	LONGITUDE	ELEVATION
BM.10-1	8319906.166	246787.736			608.379

DESCRIPTION OF MARK

BOLT ON CONCRETE

DIAGRAMS

LOCATION

RP1

RP2

RP3

GENERAL INFORMATION

	AZ	DISTANCE	DESC
RP-1	7-20-31	23.201	house
RP-2	296-21-32	118.736	bridge
RP-3	298-45-30	118.688	bridge

CONTROL POINT DESCRIPTION			POINT No.	BM.10-2	
			DATE	5/24/2011	
PROJECT	BRIDGE 10		LOCATION	MOZAMBIUQE	
ZONE 37 PROJECTION U.T.M.			VERTICAL DATUM (M.S.L)		
SCALE FACTOR			HORRIZONTAL DATUM	WGS1984	
CO - ORDINATE			GEOGRAPHIC CO - ORDINATE		
POINT	SOUTHING	EASTING	LATITUDE	LONGITUDE	ELEVATION
BM.10-2	8320009	246588			606

DESCRIPTION OF MARK

BOLT ON CONCRETE

DIAGRAMS

LOCATION

RP1

RP2

RP3

GENERAL INFORMATION

	AZ	DISTANCE	DESC
RP-1	356-23-36	3.895	tree
RP-2	114-50-54	81.674	bridge
RP-3	118-19-01	81.572	bridge

CONTROL POINT DESCRIPTION			POINT No.	BM.11-1	
			DATE	23/04/2011	
PROJECT	BRIDGE 11		LOCATION	MOZAMBIUQE	
ZONE 37 PROJECTION U.T.M.			VERTICAL DATUM (M.S.L)		
SCALE FACTOR			HORRIZONTAL DATUM	WGS1984	
CO - ORDINATE			GEOGRAPHIC CO - ORDINATE		
POINT	SOUTHING	EASTING	LATITUDE	LONGITUDE	ELEVATION
BM.11-1	8322235.518	242704.340			585.424

DESCRIPTION OF MARK

BOLT ON CONCRETE

DIAGRAMS

LOCATION

RP1

RP2

RP3

GENERAL INFORMATION

	AZ	DISTANCE	DESC
RP-1	328-13-23	54.644	sign Pole
RP-2	327-35-10	63.049	bridge
RP-3	331-14-48	64.997	bridge

CONTROL POINT DESCRIPTION			POINT No.	BM.11-2	
			DATE	23/04/2011	
PROJECT	BRIDGE 11		LOCATION	MOZAMBIUQE	
ZONE 37 PROJECTION U.T.M.			VERTICAL DATUM (M.S.L)		
SCALE FACTOR			HORRIZONTAL DATUM	WGS1984	
CO - ORDINATE			GEOGRAPHIC CO - ORDINATE		
POINT	SOUTHING	EASTING	LATITUDE	LONGITUDE	ELEVATION
BM.11-2	8322428.000	242459.000			587.000

DESCRIPTION OF MARK

BOLT ON CONCRETE

DIAGRAMS

LOCATION

RP1

RP2

RP3

GENERAL INFORMATION

	AZ	DISTANCE	DESC
RP-1	275-54-50	5.241	sign Pole
RP-2	306-11-29	5.490	sign Pole
RP-3	124-54-18	15.866	sign Pole

CONTROL POINT DESCRIPTION			POINT No.	BM.12-1	
			DATE	5/24/2011	
PROJECT	BRIDGE 12		LOCATION	MOZAMBIUQE	
ZONE 37 PROJECTION U.T.M.			VERTICAL DATUM (M.S.L)		
SCALE FACTOR			HORRIZONTAL DATUM	WGS1984	
CO - ORDINATE			GEOGRAPHIC CO - ORDINATE		
POINT	SOUTHING	EASTING	LATITUDE	LONGITUDE	ELEVATION
BM.12-1	8327597.387	244506.824			582.342

DESCRIPTION OF MARK

BOLT ON CONCRETE

DIAGRAMS

LOCATION

RP1

RP2

RP3

GENERAL INFORMATION

	AZ	DISTANCE	DESC
RP-1	328-13-23	54.644	box culvert
RP-2	327-35-10	63.049	box culvert
RP-3	331-14-48	64.997	old benchmark

CONTROL POINT DESCRIPTION			POINT No.	BM.12-2	
			DATE	5/24/2011	
PROJECT	BRIDGE 12		LOCATION	MOZAMBIUQE	
ZONE 37 PROJECTION U.T.M.			VERTICAL DATUM (M.S.L)		
SCALE FACTOR			HORRIZONTAL DATUM	WGS1984	
CO - ORDINATE			GEOGRAPHIC CO - ORDINATE		
POINT	SOUTHING	EASTING	LATITUDE	LONGITUDE	ELEVATION
BM.12-2	8327817	244625			586

DESCRIPTION OF MARK

BOLT ON CONCRETE

DIAGRAMS

LOCATION

RP1

RP2

RP3

GENERAL INFORMATION

	AZ	DISTANCE	DESC
RP-1	208-10-24	141.082	bridge
RP-2	206-23-25	141.577	bridge
RP-3	206-44-40	152.978	bridge

CONTROL POINT DESCRIPTION			POINT No.	BM.13-1	
			DATE	5/24/2011	
PROJECT	BRIDGE 13		LOCATION	MOZAMBIUQE	
ZONE 37 PROJECTION U.T.M.			VERTICAL DATUM (M.S.L)		
SCALE FACTOR			HORRIZONTAL DATUM	WGS1984	
CO - ORDINATE			GEOGRAPHIC CO - ORDINATE		
POINT	SOUTHING	EASTING	LATITUDE	LONGITUDE	ELEVATION
BM.13-1	8359344.746	235112.189			566.854

DESCRIPTION OF MARK

BOLT ON CONCRETE

DIAGRAMS

LOCATION

RP1

RP2

RP3

GENERAL INFORMATION

	AZ	DISTANCE	DESC
RP-1	35-53-40	11.492	tree
RP-2	274-30-37	11.801	traffic sign
RP-3	173-52-50	16.041	house

CONTROL POINT DESCRIPTION			POINT No.	BM.13-2	
			DATE	5/24/2011	
PROJECT	BRIDGE 13		LOCATION	MOZAMBIUQE	
ZONE 37 PROJECTION U.T.M.			VERTICAL DATUM (M.S.L)		
SCALE FACTOR			HORRIZONTAL DATUM	WGS1984	
CO - ORDINATE			GEOGRAPHIC CO - ORDINATE		
POINT	SOUTHING	EASTING	LATITUDE	LONGITUDE	ELEVATION
BM.13-2	8359761.000	235133.000			567

DESCRIPTION OF MARK

BOLT ON CONCRETE

DIAGRAMS

LOCATION

RP1

RP2

RP3

GENERAL INFORMATION

	AZ	DISTANCE	DESC
RP-1	181-18-32	34.012	traffic sign
RP-2	357-16-47	27.097	traffic sign
RP-3	80-04-07	25.587	house

6.5 降雨量データ

本調査水文解析の基礎となる降雨データは、クアンバ観測所、グルエ観測所、イレ観測所から入手した。しかし、グルエ及びイレ観測所のデータは欠測期間が多く、水文解析データとして使用するには統計上の信頼性に問題があると判断した。よって本水文解析にはクアンバ観測所のデータを用いて降雨強度を算定している。

表 6.5　降雨量データ

República de Moçambique

Instituto Nacional de Meteorologia

Caixa Postal 256 - MAPUTO

Teleg.: OBSERTOR - Telefs.: 490064-490148-492530 - Fax: 491150 - Telex: SMMMP 6-259

Nº80-09/INF-DAD

Maputo,31 de Março de 2009

Ao
JICA STUDY TEAM
Oriental Consultants,Ltd

MAPUTO

Estação: Cuamba

Periodo 1960-2008

Elemento: Precipitação total diária (das 9 as 9 horas em mm)

Ano/Mes	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
1960-01	0.0	0.0	0.0	0.0	10.6	38.4	19.6	3.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6	0.0	0.0	4.2	0.0	0.0	1.3	0.0	0.0	0.0	6.8	1.9	5.3	0.0	0.0
1960-02	5.7	0.0	5.1	0.0	0.0	0.0	8.7	0.0	63.8	36.8	2.7	3.9	0.0	25.4	0.0	0.0	0.0	0.0	5.3	24.3	0.0	0.0	2.7	9.5	9.5	0.0	1.6	0.0	0.0	--	--
1960-03	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	5.6	1.4	4.5	3.2	0.5	15.7	0.6	33.4	15.8	0.3	19.2	0.0	21.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1960-04	0.0	0.0	8.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.0	0.0	0.0	0.0	0.0	--
1960-05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	29.6	14.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0
1960-06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	21.5	1.1	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	--
1960-07	0.0	0.0	0.0	0.3	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.5	0.1	0.8	0.0	0.0	0.0	0.0	0.0
1960-08	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1960-09	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	--
1960-10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1960-11	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.8	0.0	0.0	25.6	10.3	14.0	0.4	--
1960-12	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	21.3	2.1	0.9	12.2	0.9	0.6	0.0	0.0	0.0	0.0	0.0	0.5	1.5	12.4	10.5	3.0	0.5	20.2	23.5	2.2
1961-01	0.0	0.0	0.0	0.0	5.0	20.5	5.1	39.2	0.0	45.1	0.6	0.0	1.9	3.4	7.0	17.0	9.0	3.3	1.0	5.0	0.0	2.5	0.0	2.5	0.0	0.5	0.0	28.5	0.0	0.0	0.3
1961-02	3.6	1.5	6.0	21.0	1.6	0.5	2.7	4.6	6.0	4.1	0.0	9.8	0.0	3.6	0.6	6.1	11.6	0.0	0.0	0.3	2.5	0.0	4.7	6.3	2.4	0.0	0.0	0.5	--	--	--
1961-03	1.1	0.5	17.9	0.7	45.8	29.5	0.1	116.8	2.9	1.5	7.8	13.8	16.2	22.4	0.0	0.0	4.3	0.0	0.0	2.0	27.9	0.0	23.4	12.6	11.8	1.9	2.0	0.0	4.2	2.4	0.0
1961-04	0.0	0.0	0.0	3.8	22.9	1.6	0.0	0.0	0.6	0.0	0.0	0.0	34.2	9.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.3	6.2	0.1	0.0	0.0	0.8	0.0	0.0	0.0	--
1961-05	0.0	0.0	0.0	0.0	1.8	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1961-06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	--
1961-07	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.1	0.7	0.0	0.0	0.3	0.0	0.0	1.7	0.5	0.9	0.0	0.0	0.0	0.0	0.0
1961-08	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.2	0.0	0.0	0.0	6.9	0.0	0.0	0.0	1.6	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1961-09	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	--
1961-10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0
1961-11	0.1	0.1	0.0	0.0	0.0	5.1	0.0	0.0	0.0	0.0	17.7	1.4	0.0	0.0	0.0	8.7	0.4	0.0	49.1	9.5	0.0	0.0	0.3	0.0	4.2	0.0	0.0	0.0	0.0	0.0	--
1961-12	1.9	1.6	1.7	0.2	0.0	0.2	0.0	0.1	2.1	7.6	5.8	13.7	33.7	0.6	3.4	42.7	2.5	1.9	0.0	0.0	0.0	0.0	1.8	0.0	0.0	24.1	0.0	0.0	0.0	3.9	0.0
1962-01	14.7	1.8	4.2	5.3	5.2	12.0	3.7	0.4	0.3	3.5	24.6	7.4	8.0	2.8	8.2	1.4	1.3	0.1	2.2	0.0	5.4	14.0	0.0	0.0	0.0	0.0	36.7	11.7	137.4	17.2	0.8
1962-02	14.4	0.0	0.0	0.3	11.4	14.2	2.3	17.8	0.1	0.0	0.0	0.0	18.4	0.2	0.0	20.5	18.2	0.0	2.6	29.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	--	--	--
1962-03	5.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	12.4	0.0	0.1	0.1	15.7	9.7	0.0	8.0	0.3	15.7	0.5	8.6	14.8	0.0	82.4	16.2	5.0	4.0	0.0
1962-04	6.7	0.0	0.0	0.0	0.0	0.4	4.7	2.5	0.0	0.6	0.5	3.8	0.0	0.0	0.0	0.0	0.7	0.2	0.3	2.0	1.2	0.2	0.6	0.0	0.0	0.0	0.0	0.0	1.2	0.0	--
1962-05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.5	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0
1962-06	0.0	0.0	0.0	0.0	0.0	11.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	--
1962-07	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1962-08	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.0
1962-09	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	--
1962-10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.2	0.2	0.0	0.0	4.2	24.3	0.1	0.0	0.0	0.0	0.0
1962-11	0.0	0.0	0.0	0.0	0.0	2.5	0.0	3.1	0.8	1.4	2.0	19.0	0.0	0.0	0.4	0.0	0.0	0.9	0.3	0.0	0.2	0.0	6.2	0.4	1.2	0.3	9.3	15.7	18.5	--	--
1962-12	0.0	2.6	11.8	0.0	0.5	23.1	21.1	55.0	29.8	0.6	2.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	28.1	53.5	0.2	9.0	0.0	0.0	0.0	0.0	0.0	70.8	50.0	--
1963-01	0.2	23.4	3.6	11.0	2.1	6.4	12.0	0.0	17.7	0.0	0.8	0.0	2.0	7.4	15.8	0.0	0.6	39.6	2.8	0.0	0.0	0.0	46.7	1.2	1.0	0.0	0.9	1.2	6.3	6.5	11.3
1963-02	0.8	4.5	0.0	29.3	6.8	13.0	1.4	56.8	35.6	44.3	25.4	3.2	0.3	9.5	10.8	32.9	9.5	19.0	0.0	0.0	0.0	67.3	11.3	48.6	0.0	0.8	0.8	0.4	--	--	--
1963-03	0.0	3.8	40.4	32.0	0.7	0.1	5.1	0.0	0.0	0.0	0.0	3.8	1.8	0.0	30.0	0.0	0.0	4.5	1.4	0.0	0.0	0.0	0.0	0.0	2.1	0.0	0.0	5.0	1.0	0.0	7.0
1963-04	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.2	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	3.4	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	--
1963-05	0.0	0.0	0.0	0.1	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1963-06	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	--
1963-07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1963-08	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1963-09	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	--
1963-10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.8
1963-11	6.5	0.6	8.3	5.9	27.6	8.2	0.0	16.8	7.0	17.1	0.0	0.0	--	--	22.4	0.0	0.6	2.4	0.0	0.2	0.6	0.0	36.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	--
1963-12	11.0	0.0	0.0	16.0	0.0	2.0	1.0	4.6	0.0	13.0	0.0	19.0	0.0	3.0	5.1	0.0	0.6	1.6	3.7	0.0	3.2	2.4	38.6	7.9	0.5	0.0	0.7	7.3	5.2	26.9	29.2
1964-01	0.0	0.0	10.9	12.7	1.5	16.8	2.7	0.4	1.8	3.2	19.5	7.1	10.8	1.4	0.1	0.0	0.0	7.9	0.0	0.5	1.4	0.0	0.4	2.4	1.6	90.3	9.6	16.4	0.4	8.2	1.3
1964-02	5.4	0.0	1.8	24.8	0.5	6.9	3.4	0.2	4.9	34.1	40.3	1.8	0.6	15.5	0.0	10.1	15.2	0.7	0.4	19.0	10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	--	--
1964-03	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.5	1.1	0.0	4.2	0.0	0.0	0.0	1.6	0.0	0.0	0.0	0.0	1.6	25.4	3.7	0.0	0.0	0.0	0.0	0.0	0.0
1964-04	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	19.5	0.0	0.0	--
1964-05	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0
1964-06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.2	0.0	0.0	0.0	--
1964-07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1964-08	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1964-09	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	--
1964-10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1964-11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	52.1	0.0	0.0	0.0	7.6	0.0	47.4	0.0	--
1964-12	0.0	0.0	0.0	0.0	0.0	42.2	0.0	0.0	3.5	0.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	18.4	3.8	0.0	0.0	4.5	0.0	4.0	0.0	5.6	0.0	21.4	39.1
1965-01	0.0	39.1	4.0	0.0	0.0	38.2	0.0	0.0	0.0	14.2	0.0	0.0	5.9	23.2	6.9	0.0	42.5	12.4	1.2	38.4	0.0	0.0	0.0	0.0	0.0	36.4	0.0	2.5	3.6	11.4	4.0
1965-02	7.3	1.0	0.0	12.2	0.0	0.1	1.3	0.0	0.0	10.7	5.2	5.1	12.3	0.0	12.2	0.0	6.1	25.6	1.4	6.6	29.4	0.0	0.0	0.0	0.0	7.5	0.0	0.0	--	--	--
1965-03	6.0	1.3	0.0	17.1	5.1	25.4	4.4	0.0	27.8	7.0	28.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.0	0.0	6.0	32.0	37.5	10.0	1.3	0.0	2.5	6.8	0.9	22.5
1965-04	1.8	18.8	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.6	0.0	0.0	0.0	0.0	0.0	0.0	13.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	--
1965-05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1965-06	0.0	4.0	0.0	0.0	0.0	0.0	0.5	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	--
1965-07	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1965-08	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1965-09	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.9	0.3	0.0	0.0	0.0	--
1965-10	0.0	0.0	0.0	0.0	3.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1965-11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	--
1965-12	8.4	7.2	19.2	0.0	0.0	0.0	0.0	0.0	1.9	0.7	0.0	0.0	0.0	0.0	3.1	0.0	0.0	0.5	2.8	1.5	45.4	10.4	32.0	8.5	23.3	13.0	0.0	0.2	2.3	0.2	3.8
1966-01	0.3	0.0	12.7	36.4	18.4	3.8	0.3	0.0	2.6	39.0	2.5	0.0	0.0	0.0	0.0	0.0	19.2	0.0	0.0	0.0	14.1	9.6	0.0	0.0	0.2	3.0	0.0	0.0	0.0	0.0	0.2
1966-02	0.0	0.0	0.0	0.0	31.2	0.0	0.0	0.0	6.2	0.0	5.3	27.8	37.2	37.2	0.3	1.8	0.0	5.9	11.0	26.6	81.8	6.7	0.1	7.4	6.1	32.1	79.7	29.7	0.0	--	--
1966-03	0.6	22.6	0.7	0.0	2.1	3.6	0.8	0.0	0.0	11.5	1.0	0.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1966-04	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	29.8	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	--
1966-05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.7	1.7	0.0	0.0	0.0	0.3	0.4	0.0
1966-06	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4	1.2	0.0	0.0	0.0	0.0	0.0	--
1966-07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4	0.4	0.0	0.0	0.0	0.0
1966-08	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

1969-01	15.0	12.0	32.5	3.5	58.8	10.7	3.4	0.0	3.2	1.8	17.4	35.9	51.0	25.0	8.8	0.0	0.0	0.0	5.9	7.0	7.0	0.0	0.0	0.0	0.0	8.1	0.0	0.0	1.3	1.2	0.0
1969-02	0.0	18.6	0.0	0.0	0.0	1.8	71.4	28.8	0.0	0.0	2.4	0.6	26.6	1.2	0.0	0.0	0.0	0.4	1.6	0.8	17.6	3.0	12.3	3.0	0.0	2.7	0.2	0.0	–	–	–
1969-03	0.0	0.0	7.0	0.0	3.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.0	24.5	1.0	0.0	2.3	0.0	0.0	0.0	0.0	1.8	3.0	1.0	0.0	0.0	0.0	16.5	0.0	31.5	0.5
1969-04	0.0	0.0	0.0	4.0	0.2	18.0	0.0	13.1	5.1	9.6	0.0	0.0	0.0	0.0	0.0	1.7	0.0	0.0	8.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–
1969-05	1.8	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1969-06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–
1969-07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1969-08	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0
1969-09	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	7.6	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–
1969-10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1969-11	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	34.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	–
1969-12	0.0	11.2	6.3	4.6	0.0	0.0	0.0	0.0	0.0	40.8	0.0	0.0	39.0	1.8	24.5	26.9	59.5	4.9	0.8	35.4	10.0	14.6	0.3	6.2	0.1	11.4	0.0	0.0	37.0	0.0	6.7
1970-01	12.0	2.1	8.8	28.4	0.0	24.5	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	21.6	6.5	42.5	14.2	0.0	13.0	0.8	15.8	63.4	0.0	18.8	43.2	0.0	2.2	45.5	4.2
1970-02	7.4	10.4	20.2	0.3	0.3	4.6	27.0	6.6	12.8	0.3	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	3.6	0.0	0.0	0.0	3.0	0.0	0.0	0.0	–	–	–
1970-03	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	18.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1970-04	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	1.0	0.2	4.0	0.0	3.8	2.8	0.0	0.0	3.8	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–
1970-05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1970-06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	9.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–
1970-07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1970-08	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1970-09	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–
1970-10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.7
1970-11	0.0	0.0	1.6	0.0	0.0	0.0	16.8	4.4	0.0	2.0	58.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	1.3	1.3	0.0	6.5	13.2	10.1	6.8	10.8	–
1970-12	4.3	11.4	6.8	18.8	10.0	8.8	1.6	16.0	0.3	14.5	0.0	17.2	10.4	0.0	0.4	46.4	0.0	5.8	25.8	2.2	0.0	0.0	1.1	0.0	0.8	2.5	4.1	0.0	1.0	5.8	7.5
1971-01	21.4	5.6	9.7	8.6	28.2	30.8	96.0	30.1	7.7	0.0	0.0	0.0	3.2	0.0	0.5	0.0	0.0	56.4	24.9	6.1	47.9	34.2	6.2	21.7	0.0	13.4	25.1	22.3	3.3	0.0	3.3
1971-02	0.0	0.0	1.3	0.0	0.0	0.0	1.5	0.0	4.3	9.0	4.7	0.0	0.7	0.0	3.0	0.0	0.0	9.7	136.3	6.3	0.0	0.0	0.0	42.2	9.1	0.0	0.0	0.0	–	–	–
1971-03	0.0	0.0	0.0	18.1	2.9	0.0	0.0	2.8	0.9	3.4	0.0	0.0	8.8	16.2	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.2	0.0	0.0	0.0	6.8
1971-04	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.8	5.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.0	11.5	0.0	0.0	0.0	0.0	0.0	–
1971-05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1971-06	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–
1971-07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1971-08	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1971-09	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–
1971-10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.8	0.0	0.0	0.0
1971-11	0.0	0.0	0.0	0.0	0.0	0.8	0.5	0.0	0.0	0.0	9.7	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	19.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.5	0.0	–
1971-12	0.0	0.0	0.0	0.0	7.4	1.9	9.0	2.9	0.1	6.9	0.0	8.2	0.0	16.4	35.1	0.0	5.3	0.0	0.0	0.0	0.0	0.9	0.0	0.0	0.0	13.6	13.8	8.8	0.0	1.1	1.5
1972-01	0.6	0.5	0.0	0.9	0.0	2.8	8.0	26.7	0.0	8.4	0.0	0.0	4.5	40.1	71.8	4.9	1.3	2.4	0.0	0.0	0.0	10.3	0.0	0.0	0.0	7.4	0.0	2.7	0.0	0.0	8.8
1972-02	13.2	0.0	0.0	0.0	2.4	0.0	0.0	0.0	8.4	6.6	0.0	0.0	0.0	32.5	9.8	0.0	12.1	1.8	0.0	0.0	2.0	20.3	0.8	2.2	12.0	3.8	3.7	18.9	15.6	–	–
1972-03	5.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	2.6	0.0	0.0	0.0	2.4	5.1	0.0	0.0	0.0	0.0	0.0	0.0	12.0	3.0	0.0	0.0	0.0	0.0	0.5	0.0
1972-04	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	1.6	0.0	1.2	0.0	0.7	4.8	4.3	1.4	0.0	0.0	0.9	0.0	0.5	3.5	0.0	11.3	0.0	0.0	2.0	0.2	0.0	–
1972-05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.5	0.0	0.0	0.0	0.0
1972-06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	–
1972-07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1972-08	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1972-09	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–
1972-10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.7
1972-11	0.0	0.0	0.0	3.5	0.0	0.0	0.0	1.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	7.8	0.4	11.6	1.0	0.0	–
1972-12	0.0	1.1	38.1	1.8	4.4	7.0	7.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.8	0.7	1.5	25.8	26.4	6.8	2.6	29.7	27.1	1.0	0.0	0.0	0.8	13.9	0.3	0.0
1973-01	0.0	0.5	2.2	0.3	3.5	3.5	2.6	22.0	0.0	0.0	40.1	1.0	4.6	4.5	0.8	0.0	0.0	0.0	0.0	0.0	0.1	0.0	11.7	30.8	7.0	5.4	0.0	0.0	2.8	0.0	0.0
1973-02	9.5	0.5	0.0	0.0	0.0	0.0	0.4	25.9	1.5	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	14.9	0.0	2.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	–	–	–
1973-03	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.8	0.0	0.0	0.0	5.9	79.1	18.5	21.2	15.6	5.4	39.5	1.1	0.0	0.8	0.0	0.0	0.0	0.0	22.8	0.0	0.0	9.2
1973-04	0.0	0.0	0.0	12.7	0.5	0.1	14.5	1.0	0.0	9.1	0.0	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.6	0.0	0.0	–
1973-05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1973-06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–
1973-07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	12.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1973-08	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1973-09	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–
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1973-12	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
1974-01	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
1974-02	22.2	10.8	10.0	22.4	18.5	10.0	10.9	10.8	3.0	0.0	3.1	1.5	0.8	18.8	0.0	0.0	14.6	25.3	3.1	32.1	0.0	10.0	18.8	15.4	0.0	0.0	0.0	0.0	–	–	–
1974-03	0.0	0.2	8.2	0.0	13.4	12.0	18.4	17.9	5.0	0.0	0.0	16.0	0.1	3.5	24.5	0.2	0.0	0.0	0.2	0.0	2.4	0.0	15.9	2.3	2.3	0.0	7.3	3.0	0.8	18.2	17.0
1974-04	0.0	19.2	3.0	8.6	1.7	0.4	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.0	0.0	0.0	0.0	0.0	0.0	0.1	33.1	0.0	0.0	–
1974-05	0.2	3.0	7.5	0.0	0.0	0.0	0.0	23.2	18.4	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	0.0
1974-06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	19.5	0.6	25.2	21.0	–
1974-07	0.6	0.0	0.0	1.2	0.2	0.0	0.0	0.0	3.0	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0
1974-08	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1974-09	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–
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1974-12	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
1977-01	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
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1977-04	–	–	–	–	–	–	–	5.0	0.0	2.1	0.0	0.5	–	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.2	3.6	0.0	–
1977-05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1977-06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–
1977-07	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1977-08	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
1977-09	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.8	–
1977-10	0.0	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	34.7	0.0	0.0	0.0	0.0	0.0	0.0
1977-11	0.0	0.0	0.0	0.6	0.2	2.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.6	0.0	0.0	0.0	0.0	1.1	1.8	27.7	0.0	0.0	29.2	22.0	1.2	0.0	0.8	–
1977-12	0.0	0.0	0.0	0.8	22.6	10.7	7.9	1.2	0.0	27.2	1.0	0.4	0.0	0.0	0.0	0.0	0.0	21.5	7.4	0.2	6.6	2.8	0.0	0.5	18.0	0.0	0.0	0.2	4.5	0.5	6.4
1978-01	20.6	0.0	0.0	0.0	67.7	3.0	6.6	0.1	18.2	41.3	0.1	0.7	0.0	0.2	45.3	2.2	17.5	1.0	18.8	8.3	1.0	50.6	2.7	87.9	0.6	10.3	0.0	16.3	37.9	0.7	0.1
1978-03	0.0	33.6	0.8	0.0	5.1	4.1	23.4	0.2	9.1	6.4	4.1	0.0	14.6	33.3	0.7	5.9	0.0	49.7	0.0	0.0	22.4	5.8	0.1	0.1	4.9	3.8	6.3	10.9	10.7	9.9	9.5
1978-04	0.0	0.0	0.0	0.7	60.9	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	9.3	0.9	0.0	0.0	0.0	0.0	2.5	0.0	0.0	0.0	0.6	0.2	1.6	–
1978-05	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1978-06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	6.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–
1978-07	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	2.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

1962-01	9.7	3.8	5.8	1.3	20.0	2.1	5.3	4.8	36.0	40.7	1.8	6.8	0.0	2.3	0.0	46.3	2.4	0.0	63.6	20.8	9.5	0.2	52.4	0.0	6.9	8.3	1.8	0.0	0.0	0.0	0.0
1962-02	0.0	0.0	0.0	0.0	0.0	39.4	34.9	0.0	25.3	9.3	0.0	15.4	37.7	56.8	4.9	1.6	1.8	0.5	2.4	27.0	0.0	0.0	0.3	3.1	0.0	0.0	0.0	0.0	–	–	–
1962-03	39.4	8.8	0.0	19.8	0.4	0.0	0.5	0.0	0.0	0.0	0.0	0.3	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1962-04	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	6.8	0.3	2.8	0.0	0.0	0.0	0.0	0.3	0.3	0.0	0.0	10.7	0.3	12.3	1.4	0.0	0.0	0.3	0.0	0.0	0.0	0.0	–
1962-05	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1962-06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–
1962-07	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1962-08	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1962-09	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	–
1962-10	0.0	0.0	0.0	0.0	0.0	10.8	0.0	0.0	0.0	0.0	2.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	26.4	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1962-11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.2	0.0	0.7	23.3	0.0	0.0	0.0	0.0	0.0	1.8	0.0	8.1	2.2	0.0	0.0	20.9	0.0	0.0	6.6	0.0	–
1962-12	0.0	1.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	107.3	17.6	2.5	1.1	7.9	9.5	0.0	0.0	0.0	6.2	27.3	32.4	16.2	0.0	9.8	0.0	3.2	0.0	0.0	0.0	0.0	0.0
1963-01	0.0	0.0	1.3	7.0	0.0	3.0	3.2	0.7	0.0	0.0	0.0	0.0	0.5	64.7	4.5	1.0	0.0	0.0	0.0	4.4	0.0	2.8	19.3	23.8	0.1	0.0	0.1	2.1	0.0	0.2	0.3
1963-02	0.3	0.0	22.5	0.0	0.0	1.2	9.4	57.9	110.0	70.0	57.3	0.0	5.1	0.0	32.4	8.3	5.3	2.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.4	–	–	–
1963-03	1.1	1.0	1.7	0.3	0.0	0.0	51.8	1.7	11.1	3.4	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	26.7	0.0	0.8	0.0	12.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1963-04	0.0	0.0	0.0	0.0	0.0	0.0	30.8	10.8	0.0	1.1	0.0	0.0	0.0	13.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	6.8	0.0	0.0	–
1963-05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1963-06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–
1963-07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	19.6	0.4
1963-08	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1963-09	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–
1963-10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	18.4	0.0	0.0	0.0	9.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1963-11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	17.9	0.2	0.0	0.0	0.0	0.0	0.0	17.6	3.4	0.0	0.0	0.0	0.0	1.2	4.4	–
1963-12	0.0	6.1	1.3	0.0	49.3	0.8	0.0	0.0	0.0	17.3	0.0	0.0	0.0	18.3	34.4	28.4	5.1	0.3	9.2	0.0	23.6	1.8	0.4	0.0	0.0	77.0	7.6	0.0	0.0	0.8	1.8
1964-01	0.0	15.0	28.1	2.2	0.9	0.0	0.0	5.8	7.1	11.8	2.1	0.3	1.7	18.9	20.3	37.0	1.4	0.0	0.0	0.3	18.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	20.0	20.2
1964-02	4.3	22.3	1.6	8.8	42.0	9.8	5.3	38.5	0.0	0.5	2.6	0.0	0.0	0.0	0.0	1.2	0.0	0.5	0.5	0.0	28.1	10.8	7.1	36.4	1.1	0.1	7.3	2.4	0.0	–	–
1964-03	0.0	0.3	10.1	1.0	0.2	0.0	0.4	14.5	0.0	2.1	0.0	0.0	0.0	1.5	20.8	0.7	0.0	0.0	15.2	5.1	0.0	0.0	0.0	0.3	0.0	0.0	0.0	25.6	0.0	7.7
1964-04	0.0	0.0	0.0	0.9	3.0	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.4	0.2	0.0	0.0	1.8	0.0	0.0	7.1	–
1964-05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.1	2.6	0.0	0.0	0.0	0.0	0.0	0.0	1.6	0.0	0.0	0.0	0.2
1964-06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.0	0.0	5.0	0.0	0.0	0.0	–
1964-07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.5	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	2.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1964-08	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1964-09	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	–
1964-10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1964-11	0.0	0.0	0.0	0.0	0.0	5.4	24.5	43.6	0.0	0.4	0.0	0.0	16.6	1.1	0.0	0.0	0.0	0.0	12.3	0.2	0.0	0.0	0.0	1.6	0.0	0.0	0.0	0.0	0.0	0.0	–
1964-12	0.0	0.0	0.0	0.0	0.0	0.0	0.9	21.6	2.9	0.0	0.3	1.7	1.1	2.8	10.7	1.6	14.3	14.4	1.0	20.9	9.2	0.4	5.0	0.9	0.0	16.4	0.0	9.9	3.4	17.9	10.2
1965-01	0.3	18.4	0.3	0.0	0.0	0.0	0.0	3.8	6.6	0.6	0.7	0.6	0.7	0.0	26.7	0.0	0.0	3.3	1.0	0.0	30.1	1.1	28.4	68.6	4.0	2.7	3.4	8.0	0.0	0.0	12.4
1965-02	0.3	1.1	4.7	5.0	0.2	49.3	11.8	38.5	9.2	28.7	0.2	2.1	6.2	22.0	3.7	0.2	0.0	0.0	0.0	0.0	0.0	2.1	0.0	0.0	0.0	1.7	0.0	0.0	–	–	–
1965-03	0.0	0.8	12.0	5.3	5.3	13.1	0.0	0.0	0.0	2.2	0.1	3.7	0.1	25.3	7.4	0.6	4.6	20.3	0.1	5.6	1.7	53.6	0.3	8.3	17.1	3.7	1.2	0.0	0.0	0.0	0.0
1965-04	0.0	21.1	0.0	0.1	4.3	11.4	0.0	6.3	1.1	43.2	0.2	0.0	0.2	0.0	0.5	0.0	0.3	0.0	3.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	–
1965-05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1965-06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.8	0.0	0.0	0.0	0.0	0.0	–
1965-07	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1965-08	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.4	0.0	0.0	0.0
1965-09	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–
1965-10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.1	0.2	0.0	0.0	2.1	0.0	23.4	0.0	0.0	0.0	0.0
1965-11	0.0	0.0	0.0	0.0	0.0	2.8	0.0	0.4	0.0	1.3	0.0	3.0	0.3	2.5	0.0	0.0	0.0	0.0	8.8	8.9	0.6	4.8	0.3	0.0	0.8	0.9	14.4	2.8	1.4	0.0	–
1965-12	0.0	0.5	0.0	19.3	11.0	4.0	30.5	1.5	9.6	9.6	0.0	0.0	54.5	3.9	11.0	0.0	0.0	14.7	0.5	11.3	1.2	18.5	0.2	6.8	0.8	60.3	0.0	26.2	2.2	10.5	0.0
1966-01	20.2	4.0	0.3	4.7	0.2	11.5	12.9	3.4	30.0	0.0	0.0	18.2	0.0	17.5	0.0	0.0	0.0	25.1	7.4	18.4	1.0	13.5	0.3	42.7	3.8	19.0	7.5	0.4	5.6	3.1	1.5
1966-02	1.2	0.0	0.0	11.4	3.6	78.5	4.0	3.2	48.5	4.4	2.6	11.0	0.0	19.8	0.6	0.3	0.0	0.4	0.0	0.0	0.0	7.9	24.7	0.0	0.2	56.2	3.4	0.0	–	–	–
1966-03	0.0	16.0	0.0	0.3	0.2	1.9	16.6	1.2	0.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.7	37.7	33.5	3.6	0.0	0.0	0.7	0.0	12.4	0.0	0.0	1.0
1966-04	0.5	1.7	6.8	0.0	2.2	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–
1966-05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1966-06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–
1966-07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0
1966-08	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1966-09	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–
1966-10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.6	1.5	0.0	0.2	0.2	0.0	21.3	0.0	0.6	0.0	0.0	0.0	0.0	1.8	0.0	3.2	0.0	0.8	0.0	1.1	0.0	0.0	0.6
1966-11	0.0	0.0	0.0	14.2	0.0	12.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.6	69.2	13.0	0.0	0.0	0.0	17.7	0.0	0.0	0.0	0.0	–
1966-12	1.0	20.6	4.0	0.2	52.7	49.3	18.8	4.4	2.9	18.8	8.0	1.4	0.3	1.5	0.0	0.0	0.0	2.2	3.8	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.0	0.0	0.0	2.0	19.4
1967-01	30.1	18.0	0.6	16.4	12.5	0.0	0.0	0.0	0.0	0.0	19.8	6.0	1.0	0.0	2.0	18.1	0.3	17.5	4.5	0.0	19.5	5.1	33.4	47.2	1.0	0.0	9.0	0.8	14.7	8.4	9.8
1967-02	0.9	3.4	0.0	0.0	0.0	0.0	0.0	24.6	1.6	0.0	0.0	0.6	1.9	4.1	0.0	0.0	0.0	0.0	27.0	21.6	13.8	0.0	82.0	3.2	0.0	0.0	3.1	2.0	–	–	–
1967-03	0.2	0.0	6.6	2.8	0.0	0.0	12.8	0.0	0.0	2.6	0.0	28.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.0	3.0	1.0	87.3	0.2	7.8	0.0	0.0	0.0	0.0	7.2
1967-04	27.0	0.0	5.7	9.8	0.0	0.0	0.0	0.0	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–
1967-05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1967-06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	–
1967-07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1967-08	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1967-09	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–
1967-10	0.0	0.0	1.0	3.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0
1967-11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.3	0.1	1.9	0.0	17.8	9.1	–
1967-12	3.1	4.9	0.0	27.3	0.0	80.1	0.0	0.0	7.4	1.0	0.0	0.0	0.0	4.8	0.0	0.0	0.0	0.0	1.6	0.0	0.0	0.0	0.0	0.0	2.6	0.0	0.0	0.0	0.2	1.2	21.3
1968-01	4.8	0.0	0.0	0.0	0.2	26.9	0.0	1.6	6.2	45.6	9.4	4.7	13.4	3.4	3.9	3.5	0.0	0.0	20.0	1.6	75.2	8.8	3.3	23.5	0.8	15.6	2.4	23.2	0.0	0.0	0.7
1968-02	0.0	6.9	0.0	0.0	0.0	0.0	9.2	38.7	19.0	4.1	4.6	1.7	0.4	66.3	15.6	5.8	8.5	63.7	0.0	2.2	21.4	7.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–	–
1968-03	0.0	0.0	0.0	3.5	0.0	0.0	26.7	0.0	0.0	9.3	2.6	0.0	10.3	0.0	66.1	0.0	0.0	7.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1968-04	9.2	0.0	0.0	0.0	18.6	0.0	0.0	0.0	0.0	0.0	0.0	1.2	0.0	0.0	0.0	0.0	0.0	2.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–
1968-05	0.0	0.0	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.0
1968-06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–
1968-07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1968-08	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1968-09	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–
1968-10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.6	1.0	0.0
1968-11	22.8	0.0	0.0

1993-01	0.1	0.0	8.3	3.0	1.1	18.6	0.1	1.6	2.7	9.6	60.2	6.3	9.5	8.3	14.5	1.6	4.8	24.7	3.5	0.0	1.1	2.1	4.6	0.0	4.1	29.8	0.0	1.1	0.0	0.0	0.0
1993-02	0.0	0.0	0.0	4.1	0.3	11.5	7.1	17.5	0.5	0.2	0.0	0.0	4.4	3.7	7.9	2.0	3.6	0.4	9.4	3.5	3.6	0.0	12.5	10.5	4.1	38.8	0.2	47.2	–	–	–
1993-03	0.0	19.4	0.0	0.0	0.0	0.7	29.0	42.7	0.0	0.0	1.2	0.0	0.0	0.0	0.0	6.0	50.1	0.0	0.0	0.0	10.5	0.0	0.0	0.1	3.6	15.0	0.0	0.0	0.0	0.0	0.0
1993-04	0.0	0.0	0.0	0.0	0.0	6.8	0.0	3.0	0.0	21.5	0.0	4.6	0.0	0.0	0.0	11.6	0.0	0.0	0.0	22.3	16.6	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	4.3	–
1993-05	4.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1993-06	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–
1993-07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1993-08	3.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.9	0.0
1993-09	0.0	10.7	0.2	0.0	3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–
1993-10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	30.0	
1993-11	0.0	3.0	0.0	0.0	2.4	2.8	0.0	2.1	0.0	0.0	0.0	0.0	13.8	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.7	0.0	0.0	0.0	0.0	0.0	0.0	–
1993-12	5.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.8	0.0	0.0	2.6	0.0	0.0	1.7	0.0	0.0	0.0	41.1	0.0	13.6	0.8	2.9	0.0	0.0	0.0	0.4	7.2	0.0	0.0
1994-01	0.0	0.2	13.0	0.0	45.4	9.5	4.1	0.0	0.0	1.6	2.1	0.0	0.0	0.0	26.6	0.0	0.5	0.0	15.2	0.0	0.0	0.0	4.6	2.5	67.4	0.0	0.4	19.8	5.8	22.9	12.6
1994-02	0.4	0.0	0.0	0.0	9.4	0.0	3.0	3.0	7.3	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.0	0.0	0.2	0.0	2.1	–	–	–
1994-03	0.0	0.0	0.0	8.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.1	1.9	10.9	0.4	5.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.4	11.6	5.1	0.0	17.7	0.0	2.6
1994-04	0.0	5.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	2.6	0.0	0.0	0.0	0.0	–
1994-05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1994-06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–
1994-07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1994-08	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1994-09	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–
1994-10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.2	0.0	0.1	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
1994-11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.4	8.2	0.0	11.4	48.3	–
1994-12	0.0	0.0	0.0	33.0	5.7	2.9	0.2	6.9	0.0	0.0	13.6	10.9	15.7	0.0	6.6	0.0	0.0	0.0	0.0	0.0	6.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.6
1995-01	8.6	53.4	19.2	9.0	14.3	17.6	17.9	0.0	0.0	20.6	0.0	46.4	0.6	34.4	5.7	2.8	17.6	0.0	55.6	1.3	26.1	31.7	0.0	0.0	0.0	2.1	2.5	0.0	1.9	0.0	0.3
1995-02	4.0	0.0	5.8	0.4	25.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.1	0.0	0.0	0.0	0.0	9.6	0.0	1.5	2.0	0.0	12.2	29.7	59.6	0.0	0.0	4.7	–	–	–
1995-03	6.1	0.0	0.0	0.0	0.0	0.1	0.5	0.0	5.6	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	25.0	5.9	7.6	0.2	2.2	0.2	0.0	0.0	0.0	0.0
1995-04	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	35.5	32.7	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–
1995-05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1995-06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	–
1995-07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1995-08	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1995-09	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–
1995-10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1995-11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	56.4	0.0	0.0	2.2	–
1995-12	0.0	0.0	0.0	1.0	0.3	0.0	0.0	16.5	67.4	1.9	17.2	66.1	0.0	0.0	9.1	0.0	0.0	0.0	0.0	3.7	0.0	6.6	0.0	83.3	12.0	24.6	0.7	0.0	0.0	0.0	11.3
1996-01	0.0	0.0	0.0	0.0	19.2	0.8	3.8	30.6	0.0	0.0	0.0	0.0	5.8	3.4	12.2	0.7	2.6	16.2	0.0	4.3	33.9	11.7	6.7	4.7	0.0	0.0	0.0	22.4	0.8	8.4	4.1
1996-02	7.5	3.2	18.4	0.6	0.0	3.6	4.6	29.6	8.8	0.0	0.0	0.0	0.0	0.0	0.0	2.7	18.0	2.1	0.0	5.6	22.8	3.8	0.0	18.6	6.7	8.2	5.2	5.8	0.0	–	–
1996-03	23.6	11.3	43.7	0.0	0.8	60.1	8.5	56.1	5.7	23.4	4.3	1.3	0.0	19.3	39.3	25.7	37.9	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.5	0.5	0.0
1996-05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.0	8.4	0.0	0.3	0.8	0.1	1.3	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0
1996-06	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	–
1996-07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1996-08	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1996-09	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–
1996-10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
1996-11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.1	0.0	0.0	0.6	1.7	0.0	–
1996-12	0.0	0.0	0.0	2.0	0.0	2.2	0.0	0.0	14.1	0.0	0.0	8.0	4.6	34.7	0.3	1.0	0.0	0.0	0.2	2.0	27.6	13.2	18.4	7.5	43.9	0.0	0.0	0.2	59.7	26.0	0.6
1997-01	0.0	0.0	0.0	0.2	10.0	0.0	0.0	0.0	0.0	23.1	0.9	5.8	0.0	1.7	0.0	8.0	0.3	0.0	4.3	11.4	4.0	7.7	26.1	1.0	0.0	0.0	2.3	33.8	11.5	18.6	13.8
1997-02	9.3	0.0	4.2	0.0	16.6	0.0	13.8	0.4	31.9	0.8	4.6	48.0	0.2	0.0	25.0	0.1	17.6	54.3	6.0	0.7	9.8	0.0	0.0	12.9	4.5	2.7	0.6	1.5	–	–	–
1997-03	1.3	23.2	6.6	0.0	0.0	0.0	0.0	0.0	0.0	4.7	0.0	0.0	0.2	0.3	2.8	3.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.4	0.0	0.0	2.9	0.3	0.0	0.0	0.0
1997-04	0.0	0.0	0.0	0.0	8.0	19.0	70.5	0.6	6.9	10.9	0.0	0.0	0.0	0.0	0.0	0.0	4.8	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–
1997-05	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1997-06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.8	0.0	0.0	0.0	0.0	0.0	0.0	–
1997-07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	4.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1997-08	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1997-09	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–
1997-10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.4	6.2	0.0	0.0	0.0	0.1	0.0	0.0	3.3	0.0	0.0
1997-11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.6	75.4	1.9	0.0	0.0	0.0	0.0	2.8	0.0	4.9	0.0	18.0	11.9	–	
1997-12	2.9	0.0	0.0	0.0	7.7	0.0	0.0	0.0	85.8	0.0	0.3	0.2	15.6	0.1	2.6	0.4	0.0	0.0	16.7	17.9	12.3	6.3	38.6	25.1	27.6	5.3	0.0	14.2	6.4	0.0	0.0
1998-01	32.1	0.0	0.0	11.1	0.0	0.0	0.0	4.5	1.7	0.0	20.6	8.6	22.3	20.1	74.5	0.6	12.4	35.8	1.8	0.0	0.0	0.0	31.3	62.3	3.9	1.3	0.0	0.7	0.0	10.2	1.2
1998-02	41.2	0.8	21.8	8.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	6.7	0.6	0.0	9.5	6.9	6.5	7.8	27.4	0.0	0.0	–	–	–
1998-03	0.0	1.9	0.3	0.1	0.0	0.0	0.0	0.0	0.0	2.1	7.8	10.5	0.0	16.6	10.3	23.6	0.0	0.0	0.0	0.2	0.2	1.2	6.3	3.4	0.0	0.0	4.3	0.0	0.0	0.0	0.0
1998-04	0.0	0.0	0.0	0.0	0.0	2.6	6.6	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–
1998-05	0.0	0.0	0.0	0.0	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1998-06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–
1998-07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1998-08	0.3	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1998-09	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–
1998-10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	2.3	0.0	0.0	0.8	0.3	0.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0
1998-11	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.3	0.0	0.0	0.0	0.0	0.0	–
1998-12	0.0	0.0	0.0	0.0	0.0	4.1	0.0	0.0	11.8	14.7	5.7	24.7	16.3	0.9	0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.0	37.1	62.2	0.0	0.0	0.0	0.0	1.0	0.0	36.9
1999-01	2.9	0.0	0.2	28.4	3.4	1.6	2.6	0.1	4.6	0.0	2.5	0.0	0.0	25.8	13.4	15.5	9.1	17.6	13.4	0.0	0.0	0.0	0.0	26.7	20.5	21.8	27.6	4.3	12.5	37.3	0.0
1999-02	22.8	22.0	34.0	6.5	0.0	1.7	24.4	0.0	2.2	21.4	0.7	0.0	47.7	0.0	0.0	0.0	0.0	40.4	19.0	2.2	10.3	31.1	0.0	0.0	24.5	36.5	17.2	11.1	–	–	–
1999-03	0.0	10.2	10.5	0.0	0.0	0.0	6.7	7.1	11.1	19.7	0.0	0.3	21.6	5.5	6.6	0.0	0.0	0.0	3.9	0.0	0.6	17.8	29.9	0.0	1.2	0.0	0.0	0.3	0.0	0.0	6.8
1999-04	0.4	5.4	12.8	0.0	6.8	4.4	0.2	0.4	0.0	1.0	0.6	6.0	0.0	0.6	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–
1999-05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1999-06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–
1999-07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	1.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1999-08	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.0	0.0	0.0	0.0	0.0	0.0	0.0
1999-09	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–
1999-10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1999-11	0.0	0.8	1.5	0.0	0.0	33.8	0.0	0.0	0.0	1.4	0.0	0.0	1.3	12.7	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–
1999-12	0.0	0.0	0.

2004-01	8.4	8.9	22.5	0.0	0.0	0.0	0.0	0.0	9.6	4.0	0.0	1.8	0.0	0.0	0.0	0.0	1.0	14.7	22.8	59.6	40.7	7.3	7.8	29.4	0.0	10.8	0.0	4.5	34.1	7.5	0.6
2004-02	0.8	0.0	0.0	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	58.1	22.3	20.6	10.4	22.7	0.2	15.0	0.0	2.7	7.2	0.0	0.0	0.0	24.6	0.0	3.3	0.0	–	–
2004-03	1.6	11.2	1.4	4.8	0.3	0.9	0.8	0.0	0.0	0.0	0.0	0.0	0.2	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	18.3
2004-04	19.4	23.3	7.9	9.7	22.4	0.0	0.0	0.0	14.4	0.0	0.0	0.0	0.1	0.0	0.0	0.0	1.0	0.6	3.5	0.0	0.0	0.0	9.3	0.0	0.0	0.0	0.0	1.3	1.1	0.0	–
2004-05	8.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2004-06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.8	0.0	0.0	–
2004-07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2004-08	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2004-09	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–
2004-10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.8	0.0	0.0	4.2
2004-11	1.1	0.0	0.0	0.0	0.0	0.0	1.8	0.0	6.5	0.0	2.6	46.4	0.0	5.4	2.8	0.0	3.8	0.0	0.0	0.0	0.0	0.0	0.0	4.0	1.2	8.3	0.0	0.0	0.0	0.6	–
2004-12	4.2	13.4	21.4	16.6	0.0	54.3	5.4	0.0	0.0	2.8	0.0	0.0	0.0	0.0	2.8	1.6	4.4	0.0	7.4	0.0	50.3	16.1	4.7	0.0	38.4	0.0	29.3	10.0	20.9	13.9	9.1
2005-01	30.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	2.0	37.2	10.0	2.6	17.1	0.0	23.4	20.3	0.0	5.3	0.0	6.0	0.0	0.0	0.0	16.7	0.0	15.7	0.0	5.0	0.2	6.8
2005-02	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	54.1	0.0	3.8	22.2	0.7	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	41.1	0.2	0.0	4.2	12.7	–	–	–
2005-03	6.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.6	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	15.6	0.0	0.0	0.0
2005-04	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	8.6	0.0	0.0	1.5	0.0	28.8	0.0	0.0	0.0	–
2005-05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	26.7	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0
2005-06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–
2005-07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2005-08	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2005-10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.6	0.2	1.0	0.0	0.0	0.0	0.0
2005-11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.7	0.9	4.0	0.0	0.0	–
2005-12	1.5	3.4	0.0	0.0	0.0	25.4	0.0	0.0	16.0	0.0	0.0	25.1	140.1	0.1	17.0	7.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	15.3	0.0	21.3	0.0	30.0	16.0
2006-01	99.9	131.5	29.8	0.3	16.0	0.0	0.0	0.0	0.0	0.0	89.0	0.0	37.0	8.0	4.0	68.0	17.5	2.5	0.0	0.0	0.0	19.0	79.2	0.0	0.0	16.7	25.6	40.0	6.6	0.0	0.0
2006-02	0.0	12.5	34.7	28.9	0.6	0.0	14.2	0.1	0.0	0.0	0.0	0.0	8.5	56.8	0.0	34.5	19.0	0.0	3.6	19.6	0.0	8.8	0.0	0.0	0.0	0.0	0.3	0.2	–	–	–
2006-03	0.0	13.0	0.5	7.5	44.9	25.1	4.6	33.1	0.0	26.7	18.7	2.9	0.0	1.8	0.0	2.4	7.7	2.0	13.5	0.0	0.0	5.4	0.0	0.0	0.0	2.3	4.8	4.1	10.0	4.4	13.1
2006-04	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	3.6	24.3	0.7	0.0	20.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	1.2	3.3	0.0	0.0	0.0	–
2006-05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2006-06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–
2006-07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	11.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.8	4.5	4.8
2006-08	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2006-09	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–
2006-10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2006-11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	18.9	0.0	60.1	22.8	0.0	0.0	0.0	1.0	0.0	0.0	0.0	57.1	31.6	0.0	2.1	0.0	1.1	0.0	–
2006-12	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
2007-01	9.0	46.1	71.3	9.5	7.1	8.1	2.7	9.7	1.5	3.1	0.0	0.0	3.1	49.6	43.1	1.8	1.2	21.3	19.1	77.8	15.8	26.1	11.7	78.0	0.3	2.2	0.0	46.6	3.8	0.8	29.9
2007-02	2.2	6.4	3.5	0.8	0.0	0.3	14.6	2.9	0.0	0.0	0.5	2.9	23.2	45.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.7	0.0	1.3	0.0	–	–
2007-03	0.3	0.0	1.3	0.0	0.9	–	9.0	0.0	7.7	1.0	9.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.1	0.0	0.5	0.0	0.0	0.0	2.3
2007-04	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.3	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.1	–
2007-05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.8	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0
2007-06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–
2007-07	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2007-08	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2007-09	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–
2007-10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.2	0.0	2.8	0.5	20.8	0.0	5.5	0.0	0.0	0.0	6.9	0.0	0.0	0.0	0.0
2007-11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.3	0.0	0.0	0.0	0.0	6.4	17.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	–
2007-12	0.0	0.0	0.0	0.0	0.0	14.6	2.3	0.0	7.8	0.0	66.0	0.0	5.0	13.5	0.0	1.8	5.3	0.0	6.3	45.2	0.0	11.8	0.0	0.0	3.8	78.7	0.0	0.0	7.3	2.6	8.5
2008-01	11.3	0.0	0.0	47.8	18.8	2.9	55.1	0.0	23.1	3.8	2.1	16.6	16.2	12.2	11.6	0.0	12.2	4.8	4.6	0.0	0.0	16.9	57.6	69.8	14.7	12.1	24.2	33.0	28.0	4.9	0.0
2008-02	0.0	0.0	0.0	0.0	0.0	0.0	5.5	24.3	9.3	9.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	57.4	0.0	0.0	0.0	0.0	13.4	0.0	0.0	4.1	–	–
2008-03	4.2	0.0	0.0	14.8	2.1	8.4	0.0	0.0	0.0	0.0	1.3	9.7	0.0	2.4	0.0	2.7	9.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2008-04	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–
2008-05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2008-06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–
2008-07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
2008-11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.7	69.3	83.8	2.8	5.4	0.0	0.0
2008-12	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

República de Moçambique

Instituto Nacional de Meteorologia

Caixa Postal 256 - MAPUTO
Teleg.: OBSERTOR - Telefs.: 490064-490148-492530 - Fax: 491150 - Telex: SMMMP 6-259

Nº120-11/DOR-DAD

Maputo, 29 de Março de 2011

A

Eigth- Japan Engineering
Consultants Inc

Maputo

Estação: Cuamba

periodo: 2008-2010

Elemento: Precipi+B128tação total diaria (das 9 ás 9h, em mm)

Ano/Mês	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
2008-01	11.3	0.0	0.0	47.8	18.8	2.9	55.1	0.0	23.1	3.8	2.1	16.6	16.2	12.2	11.6	0.0	12.2	4.8	4.6	0.0	0.0	16.9	57.6	69.8	14.7	12.1	24.2	33.0	28.0	49.0	0.0
2008-02	0.0	0.0	0.0	0.0	0.0	0.0	5.5	24.3	9.3	9.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	57.4	0.0	0.0	0.0	0.0	13.4	0.0	0.0	4.1		
2008-03	4.2	0.0	0.0	14.8	2.1	8.4	0.0	0.0	0.0	0.0	13.0	9.7	6.0	2.4	0.0	2.7	9.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2008-04	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
2008-05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2008-06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
2008-07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2008-08	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2008-09	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
2008-10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.0
2008-11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.7	69.3	83.8	2.8	5.4	0.0	0.0		
2008-12	4.0	11.1	77.8	0.0	0.0	0.6	1.7	0.0	2.4	3.0	0.7	29.7	1.1	86.0	0.0	2.7	0.0	65.8	16.6	17.6	61.4	0.0	0.0	44.4	9.4	5.7	2.1	0.0	0.0	0.0	0.0
2009-01	0.0	0.0	0.0	67.3	8.2	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.1	10.6	0.3	8.7	5.1	5.8	26.0	0.6	3.0	0.0	0.8	3.9	1.4	0.0	0.0	0.1	
2009-02	6.1	10.4	3.6	0.0	34.6	2.7	0.0	0.0	0.0	7.5	11.4	10.2	5.6	10.3	4.8	0.0	5.2	4.2	0.0	0.0	13.9	0.0	0.0	8.5	0.3	2.8	1.4	1.7			
2009-03	0.4	2.2	6.4	35.0	13.5	0.4	0.0	0.9	0.0	3.1	0.0	0.0	0.0	0.0	0.0	19.1	10.3	0.0	38.3	21.1	28.6	24.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6
2009-04	0.0	23.6	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
2009-05	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2009-06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
2009-07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2009-08	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
2009-09	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
2009-10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.5
2009-11	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.7	3.4	0.0	0.0	18.4	1.3	0.0	14.7		
2009-12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.6	16.0	0.0	3.3	0.7	0.0	0.0	0.0	0.0	0.0	4.0	29.8	18.7	0.0	0.3	8.2	1.0	0.0	2.9	23.9	9.9	7.5	
2010-01	21.7	0.0	0.0	9.9	112.2	12.4	19.5	0.0	0.0	0.0	0.0	3.2	7.8	0.0	0.0	4.1	0.0	0.8	19.8	0.9	0.0	0.0	0.0	0.0	1.8	0.0	2.1	0.0	0.0	1.2	25.0
2010-02	33.1	34.4	0.0	1.2	0.0	10.0	0.0	0.0	0.0	0.7	0.0	38.4	0.0	0.0	24.0	14.1	16.6	13.6	11.4	23.0	20.8	1.3	0.0	6.3	16.8	7.8	41.8	0.6			
2010-03	36.1	15.6	30.1	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	23.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	19.3	0.0	0.0	1.4	0.0
2010-04	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.5	0.0	0.0	0.0	0.0	4.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.2	0.0	0.0	0.0	0.0	0.0	4.2	
2010-05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	2.1	0.0	0.0	0.0	0.0	0.0	4.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2010-06	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
2010-07	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
2010-08	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
2010-09	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
2010-10	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
2010-11	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
2010-12	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

Estação: Ile

periodo: 1981-1990

Elemento: Precipitação total diaria (das 9 ás 9h, em mm)

Ano/Mês	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
1981-01	0.0	3.5	3.4	0.0	0.0	0.0	0.0	0.0	1.0	0.0	22.5	8.3	5.2	0.7	14.8	0.0	0.0	22.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1981-02	20.9	30.0	6.3	23.4	3.4	7.5	3.8	5.5	27.0	3.8	0.0	14.5	6.5	29.5	5.2	60.0	6.8	2.9	0.0	0.0	0.0	52.8	15.7	7.7	1.0	0.0	0.0	0.0	–	–	–
1981-03	0.0	40.2	0.0	0.0	22.4	80.0	13.0	2.0	0.0	8.5	6.0	3.0	36.5	0.0	0.0	5.7	60.9	1.5	3.5	0.0	0.0	0.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.3
1981-04	4.1	4.0	0.0	0.0	2.0	0.5	0.0	0.0	0.0	3.9	14.0	3.2	0.0	0.0	0.0	0.0	0.0	0.0	4.5	12.5	46.4	8.5	0.0	0.0	0.0	1.8	0.0	0.0	25.8	65.0	–
1981-05	5.1	3.5	0.0	4.9	0.0	0.0	0.0	0.0	1.9	6.4	2.2	3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.5	0.0	0.0	2.2	10.0	0.0	0.0	0.0	0.0	0.0	0.0
1981-06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.0	3.4	8.4	13.1	0.0	0.0	0.0	0.0	2.8	6.1	4.2	0.0	0.0	0.0	6.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–
1981-07	3.0	0.0	2.0	0.0	5.1	9.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.7	5.2	18.7	0.3	0.0	0.0	0.0
1981-08	2.0	5.4	0.0	0.0	0.0	0.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.0	0.0	4.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1981-09	0.0	0.0	30.6	5.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–
1981-10	0.0	0.0	0.0	0.0	0.0	2.0	9.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	13.4	0.0	0.0	0.0	0.0	0.0	9.4	1.5	0.0	0.0	43.0	19.0
1981-11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	0.0	0.0	0.0	5.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.7	0.0	0.0	19.0	0.0	–
1981-12	60.5	7.2	0.6	0.0	0.0	0.0	0.0	0.0	8.5	9.5	27.2	1.3	0.0	0.0	0.0	0.0	26.9	0.0	0.0	0.0	0.0	0.0	2.4	4.5	6.2	1.8	0.0	31.4	11.5	45.0	18.3
1982-01	5.0	0.0	0.0	0.0	38.2	20.5	20.0	2.7	42.2	33.7	13.6	14.0	4.6	0.0	0.0	0.1	0.0	0.0	28.5	76.7	1.5	0.0	15.4	0.0	0.0	17.7	0.0	9.6	0.0	0.0	0.0
1982-02	0.0	22.8	0.9	0.0	0.0	43.0	23.2	2.2	0.1	0.0	20.8	37.3	9.7	27.2	44.8	5.7	78.5	13.0	9.1	2.1	0.0	0.0	0.0	23.8	0.4	0.1	0.9	6.8	–	–	–
1982-03	0.0	0.0	0.0	0.0	35.9	2.1	2.2	7.4	0.0	0.0	0.0	2.5	2.6	0.0	16.8	0.0	0.0	0.0	0.0	11.5	0.8	11.0	15.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1982-04	0.0	0.0	15.3	0.0	0.0	0.0	0.1	0.0	0.0	14.6	0.0	0.0	2.0	0.0	1.1	5.2	0.0	0.0	22.1	0.0	8.5	36.5	3.3	0.0	7.9	4.3	0.0	0.0	0.0	0.0	–
1982-05	0.0	0.0	0.0	13.5	0.0	0.0	0.0	0.0	1.3	8.6	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.2	0.0	0.0
1982-06	0.0	2.5	10.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.2	0.0	–
1982-07	0.0	0.0	0.0	1.1	0.0	7.1	0.0	25.1	9.8	0.0	0.0	0.0	0.0	0.0	5.6	2.9	2.7	2.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1982-08	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	3.4	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1982-09	0.0	0.0	0.0	0.0	0.0	44.1	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.5	0.3	0.0	0.0	0.0	0.0	0.0	0.0	–
1982-10	0.0	0.3	0.0	0.0	0.0	43.0	0.0	8.7	0.0	0.0	0.0	0.0	0.0	0.0	8.3	0.0	0.0	0.0	0.0	0.0	0.0	6.0	30.6	6.1	0.0	0.0	0.0	0.0	4.0	5.0	2.5
1982-11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.7	0.0	4.5	6.6	1.2	3.5	0.0	0.0	0.0	0.0	0.0	12.3	0.0	0.0	8.4	0.0	0.0	0.0	0.0	–
1982-12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.6	2.6	24.0	3.0	3.1	46.4	14.5	0.0	0.0	0.0	2.7	40.5	47.8	0.6	1.0	0.0	0.0	0.0	0.0	0.0	24.0	8.1	0.0
1983-01	0.0	0.0	0.0	0.0	0.0	0.0	9.3	0.8	0.0	0.0	9.5	0.0	0.0	0.0	0.0	0.3	1.6	9.0	0.0	10.0	0.1	0.0	0.0	9.9	0.8	20.8	5.5	36.6	0.0	1.5	0.0
1983-02	0.0	0.0	0.0	0.0	8.4	0.0	0.0	4.0	24.5	41.3	15.3	0.0	0.0	21.4	36.0	1.2	4.5	1.5	0.0	0.0	2.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–	–	–
1983-03	3.8	0.0	1.3	0.0	13.4	0.0	0.0	0.0	15.6	0.0	0.0	0.0	15.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1983-04	0.0	0.0	1.5	0.0	0.0	0.0	0.0	2.6	5.3	3.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.7	1.4	3.6	0.0	0.0	7.2	5.5	0.0	0.0	0.0	0.0		–
1983-05	0.0	1.0	0.0	0.0	0.0	6.5	0.0	0.0	0.0	0.0	1.3	5.5	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1983-06	0.0	0.0	0.0	0.0	0.0	0.0	2.2	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	99.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–
1983-07	0.0	0.0	0.0	0.0	5.0	0.0	27.4	9.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.1	4.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	16.3	0.0
1983-08	13.6	1.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.5	5.0	0.5	0.0	0.0	0.0	0.0	0.0
1983-09	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–
1983-10	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.5	1.3	0.0	0.0	0.0	0.3	0.0	50.4	11.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.8	5.5	0.0	0.0	0.0
1983-11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	55.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	23.0	0.0	0.0	0.0	0.9	0.3	28.8		–
1983-12	0.0	5.4	2.0	15.0	11.2	0.0	2.3	0.0	0.0	9.6	0.0	0.0	4.5	0.0	0.0	3.2	48.5	0.7	36.2	17.5	4.1	0.0	0.0	0.0	0.0	0.0	1.3	0.0	1.3	0.0	
1984-01	0.0	0.0	6.7	19.3	11.3	2.6	53.8	0.0	2.4	0.0	0.0	0.0	0.0	25.6	3.0	47.2	21.5	0.0	0.0	25.6	25.5	0.0	0.0	0.0	7.2	2.2	0.0	0.0	0.0	0.0	4.1
1984-02	0.0	3.5	0.0	41.5	48.2	0.0	2.5	0.0	0.0	24.9	7.6	1.3	1.0	0.0	0.0	0.0	14.3	0.0	0.0	0.0	89.5	16.5	113.3	2.2	62.8	12.7	1.9	2.6	2.3	–	–
1984-03	0.0	0.0	6.6	47.1	46.3	9.8	22.2	4.0	4.1	13.0	4.5	1.2	0.0	15.8	38.2	24.1	22.7	0.0	0.9	0.0	3.4	7.3	0.0	0.0	0.0	0.0	38.1	19.3	9.1	0.0	
1984-04	3.8	2.7	25.6	27.5	25.3	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.1	9.3	1.6	8.7	5.6	0.0	0.0	0.0	0.0	0.0	1.3	10.8	–
1984-05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.0	2.1	0.0	3.9	4.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24.6	0.8	3.0	0.0	0.0	0.0	0.0	3.9	9.8
1984-06	3.2	4.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.2	11.8	0.0	7.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–
1984-07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.1	1.5	0.0	0.0	0.0	0.0	0.0	0.0	4.0	0.0	0.0	5.4	6.2	0.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0
1984-08	0.0	3.7	0.0	0.0	0.0	0.0	0.0	9.5	0.5	2.5	0.0	0.0	0.0	0.0	0.0	0.0	3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1984-09	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–
1984-10	11.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	9.9	12.6	34.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1984-11	0.0	0.0	0.0	0.0	27.8	20.0	2.1	6.3	2.6	4.0	8.4	7.7	5.1	45.1	0.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–
1984-12	0.0	0.0	0.0	0.0	0.0	0.0	5.1	14.0	42.2	0.0	0.0	0.0	53.1	3.5	11.7	1.1	20.8	10.0	44.0	4.8	24.6	1.5	0.0	0.0	0.0	20.5	42.5	23.5

1986-08	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1986-09	0.0	0.0	0.0	2.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.9	0.0	–
1986-10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.9	0.0	0.0	0.0	5.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	46.7	0.0	0.0	0.0	0.0	0.0	0.0
1986-11	0.0	0.0	21.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	46.9	39.6	0.0	0.0	2.2	0.0	87.7	0.0	0.0	0.0	31.5	0.0	0.0	2.3	0.0	2.5	4.3	0.0	16.3	3.2	–
1986-12	0.0	0.0	0.0	0.0	0.0	56.5	0.0	31.0	19.0	4.6	9.8	0.9	0.0	3.8	0.0	0.0	3.4	15.2	0.0	0.0	4.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9	2.0	0.0
1987-01	0.0	74.8	0.0	0.0	48.3	0.0	0.0	0.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	6.3	56.5	0.0	1.5	0.0	21.6	26.7	0.0	0.0	5.0	7.6	4.9	3.8	0.0	5.1	
1987-02	49.5	0.0	0.0	2.6	0.0	0.0	0.0	29.5	0.0	0.0	0.0	44.1	10.5	1.6	0.0	0.0	4.6	0.0	0.9	0.0	0.0	0.0	15.1	4.9	6.4	0.0	2.8	9.4	–	–	–
1987-05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.7	0.0	5.5	0.0	0.0	1.2	0.0	0.0	0.0
1987-07	3.1	1.8	0.0	0.0	0.0	0.0	5.0	0.0	0.0	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1987-09	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–
1987-11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.7	0.0	0.0	0.0	0.0	16.7	0.0	8.4	–		
1987-12	34.2	0.0	21.3	0.8	8.1	1.8	0.0	50.8	0.0	0.0	0.0	0.0	16.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	56.7	0.0	0.0	0.0	0.0	22.3	81.0	
1988-01	0.0	0.0	0.0	0.0	42.2	0.0	0.0	2.5	27.7	0.0	79.6	0.0	16.4	0.0	0.0	64.6	6.6	0.0	0.0	0.0	24.8	14.2	0.0	0.0	9.6	0.0	63.5	2.7	0.0	0.0	0.0
1988-02	0.0	0.6	5.0	0.0	0.0	0.0	0.0	74.4	2.2	13.0	2.4	0.0	27.3	108.5	0.0	6.9	21.1	3.9	0.0	1.5	13.6	74.0	56.6	0.0	0.0	0.0	0.0	0.0	0.0		–
1988-03	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	21.7	3.0	0.0	43.3	2.4	0.0	14.0	19.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1988-06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	19.6	0.0	0.0	0.0	0.0	0.0	4.8	0.0	0.0	0.0	0.0	0.0	4.3	0.0	8.1	0.0	0.0	0.0	0.0		–
1988-07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.8	0.0	0.0	0.0	0.0	8.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.0	0.0	0.0
1988-09	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		–
1988-10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.9	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.5	6.2	5.4	0.0	0.0	0.0	13.0	
1988-11	0.0	0.0	0.0	0.0	18.3	0.0	0.0	0.0	0.0	0.0	22.9	0.0	15.6	0.0	0.0	0.0	7.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		–
1990-02	0.0	1.1	0.0	4.3	28.2	10.9	0.0	5.5	14.9	1.8	0.0	23.2	0.0	2.5	0.0	0.0	56.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	38.1	58.6	1.3	–	–	–	
1990-03	0.0	0.0	0.0	0.0	0.9	8.4	8.2	0.0	0.0	0.0	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.8	0.0	0.0	0.0	7.3	8.5	0.3
1990-04	0.0	0.0	0.0	0.0	10.0	12.2	0.0	0.0	0.0	0.0	0.9	0.2	2.6	0.0	0.0	8.6	0.0	0.0	0.0	1.9	0.8	0.0	0.0	107.8	0.0	4.2	0.0	0.0	0.0		–
1990-06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.0	1.5	0.0	0.0	0.0	0.0	15.5	2.3	0.0	0.0	0.0	0.0	4.4	0.0	0.0	0.0	0.0	0.0		–
1990-08	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	19.1	0.0	0.0	1.7	26.5	2.9	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.6	0.0	0.0	
1990-09	0.0	12.0	0.0	0.0	1.2	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.7	19.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		–
1990-10	–	–	–	–	–	–	–	–	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	
1990-11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.4	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9	3.6	0.0	0.9	18.7	16.2	3.5	0.0	0.0		–
1990-12	0.0	10.5	0.0	0.0	2.4	0.0	0.0	0.0	0.0	2.8	11.0	0.0	0.0	0.0	0.0	16.8	0.0	0.0	0.0	0.0	4.3	0.0	0.0	0.0	0.0	0.0	46.4	19.2	0.0	10.0	14.0

Estação: Gurue　　periodo: 1981-2007

Elemento: Precipitação total diaria (das 9 às 9h, em mm)

Ano/Mês	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
1981-01	0.0	1.5	0.0	5.4	0.0	0.0	0.0	7.4	13.7	4.7	0.8	5.2	0.3	1.2	0.3	2.4	0.4	2.5	7.8	2.4	0.0	0.0	0.1	0.0	0.0	15.7	8.2	7.3	9.0	0.7	
1981-02	9.3	13.3	2.2	3.1	1.9	17.7	3.0	15.4	14.5	12.0	6.2	12.0	0.1	41.9	2.2	4.4	6.0	0.7	26.8	5.0	8.2	4.6	24.3	25.4	0.0	0.5	0.0	0.5	–	–	–
1981-03	13.1	7.4	0.1	0.0	6.4	22.6	22.8	0.6	0.4	14.0	28.0	11.4	3.1	2.1	1.0	1.7	1.3	64.8	4.7	27.0	0.9	1.1	0.0	0.0	0.0	0.2	0.0	0.1	0.0	0.8	3.6
1981-04	29.0	6.8	0.0	0.0	0.5	1.2	0.0	0.0	10.5	6.9	4.7	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.6	30.1	2.0	5.0	0.0	0.8	0.0	21.0	0.1	0.0	0.8	42.0	–
1981-05	7.0	2.0	5.2	0.2	0.2	0.1	7.6	7.6	1.0	4.2	0.0	0.0	0.0	0.0	0.0	0.0	5.3	0.0	0.0	0.4	0.0	2.3	2.0	11.1	0.0	0.0	0.0	0.0	0.0	0.0	
1981-06	0.0	0.0	0.1	0.1	0.1	0.1	6.0	0.1	13.7	1.2	5.3	6.5	0.1	0.2	0.2	0.1	3.0	1.8	0.2	0.1	0.0	0.2	9.7	0.0	0.1	0.0	0.1	0.1	0.0	0.0	–
1981-07	0.1	2.4	1.8	3.4	0.8	0.9	0.0	0.0	0.5	12.6	0.0	0.0	0.0	0.2	2.1	0.2	0.0	0.0	0.0	1.0	1.2	0.0	0.0	14.0	9.3	10.8	2.4	3.2	0.0	5.2	
1981-08	0.0	2.0	1.0	0.3	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1981-09	0.1	0.0	20.1	12.2	0.0	0.6	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0		–
1981-10	0.0	0.0	0.0	0.0	0.8	1.9	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.3	17.1	0.0	0.0	23.9	8.2	0.0	0.0	0.0	0.0	5.1	3.2	0.0	0.0	8.6	0.0	
1981-11	0.0	0.0	0.0	0.0	0.0	0.0	–	0.0	0.0	3.4	2.9	0.0	0.0	0.0	0.0	12.2	16.1	16.2	0.6	0.0	0.0	0.0	0.0	0.0	0.5	10.6	0.0	16.8	33.6	0.0	–
1981-12	0.0	38.0	0.3	0.1	–	0.0	9.0	6.6	36.6	36.6	6.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–	1.9	–	–	0.0	–	3.9	0.3	10.4	2.9	–	–
1982-01	–	–	–	33.7	31.4	66.7	3.6	5.4	33.3	4.0	26.5	0.0	0.0	3.6	0.1	0.1	1.2	7.8	20.9	8.6	4.5	15.5	0.0	0.0	6.6	0.1	3.8	0.7	0.0	0.0	0.0
1982-02	15.1	0.2	0.0	1.2	21.2	10.2	13.6	0.6	0.0	0.0	58.7	6.0	0.8	2.2	25.4	8.9	–	7.3	25.4	0.0	–	12.2	9.1	0.1	0.0	4.0	0.0	0.0	–	–	–
1982-03	9.5	0.0	0.0	33.2	5.6	10.5	3.4	0.0	0.0	0.6	0.0	3.2	14.3	0.0	0.0	0.0	0.0	0.0	1.8	–	8.0	10.4	0.7	0.0	0.0	0.0	7.9	4.7	0.0	3.3	0.4
1982-04	0.0	3.8	0.0	2.3	0.0	0.0	0.0	4.9	0.0	–	0.0	6.1	6.1	0.0	0.0	0.0	0.0	11.0	0.0	24.8	6.1	3.1	0.7	6.1	9.0	0.0	0.0	0.0	0.0	0.0	–
1982-05	0.0	–	8.8	0.8	0.0	0.0	1.5	1.3	9.2	9.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.1	0.1	0.0	0.0	0.0	5.1	0.0	0.0	0.8
1982-06	3.2	3.4	0.0	0.0	0.0	0.0	0.0	0.5	9.8	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	23.7	6.3	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	–
1982-07	0.1	0.0	0.0	0.4	1.3	1.1	16.0	2.6	0.0	0.0	1.5	0.0	0.0	5.4	0.0	–	–	–	–	–	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1982-08	0.0	0.0	0.0	0.0	0.0	0.8	1.2	2.6	0.2	–	0.0	0.0	0.0	25.5	0.3	15.7	0.4	0.0	0.0	0.0	0.0	0.0	23.4	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
1982-09	0.0	0.0	0.0	0.0	–	7.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–	0.0	0.0	0.0	0.0	–	0.0	2.8	0.0	0.0	0.0	0.1	0.0	0.0	0.0	–
1982-10	0.0	0.0	0.0	0.0	2.4	0.0	1.4	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	28.0	0.0	0.0	0.0	14.7	29.5	0.0	0.0	0.0	0.0	0.0	0.0	4.0	0.1	0.0
1982-11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.0	0.0	0.1	13.0	15.9	14.8	40.0	0.0	0.0	0.0	0.0	0.6	60.0	0.0	0.0	19.4	0.0	0.0	0.0	0.0	0.0	–
1982-12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.5	14.0	–	0.0	42.0	0.0	15.0	0.0	0.0	0.0	0.0	50.0	–	20.0	3.5	0.0	0.0	0.0	–	–	0.0	0.0	0.0	–
1983-01	–	–	–	1.4	–	3.4	27.5	10.0	–	–	–	–	0.6	–	51.4	–	–	–	8.7	5.0	–	1.8	–	–	11.1	9.5	3.3	1.0	–	–	–
1983-02	0.0	5.0	7.2	0.0	–	–	1.9	97.3	50.0	30.0	9.0	17.6	23.2	6.7	–	1.5	3.6	0.0	–	5.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–	–	–
1983-03	–	–	–	–	0.0	0.0	0.0	0.2	0.0	11.2	36.6	–	–	4.6	0.0	0.0	10.2	0.0	0.9	–	7.2	–	0.2	0.0	6.2	1.3	0.1	0.0	18.1	5.5	–
1983-04	1.0	0.0	0.0	1.0	0.0	30.6	2.9	3.4	1.8	–	0.0	0.0	0.0	8.5	0.9	0.0	0.0	0.0	4.1	2.2	10.0	0.1	4.1	0.0	17.4	0.0	0.0	0.0	0.0	0.8	–
2004-01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.8	0.0	0.0	18.5	2.0	0.0	0.0	0.0	3.0	0.0	43.5	5.0	32.5	20.7	2.9	25.7	0.0	0.0	0.0	3.5	38.0	5.6	0.6
2004-02	24.0	2.1	23.7	0.0	1.6	21.4	0.0	0.0	0.0	0.0	0.0	0.0	2.6	0.0	57.0	9.5	11.8	2.0	18.0	92.6	0.0	0.0	0.0	0.0	0.0	3.0	0.5	8.2	0.0	–	–
2004-03	4.2	0.0	0.0	21.8	6.0	11.5	16.0	1.3	2.3	0.7	18.8	0.0	1.5	0.0	0.0	8.8	0.0	0.0	0.6	0.0	23.0	6.7	0.0	0.0	0.0	0.0	0.0	0.0	0.5	16.0	
2004-04	0.0	0.0	0.0	74.7	45.2	0.0	0.0	15.0	5.4	3.0	0.5	0.0	6.0	0.0	9.8	4.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.0	10.3	9.5	5.7	8.2	5.8	–
2004-05	35.5	9.3	0.0	0.8	4.5	8.5	7.5	0.0	0.0	0.0	1.2	0.8	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.9	14.5	2.8	0.0	3.8	1.6	0.0	0.0	0.0
2004-06	23.2	10.2	3.8	9.0	0.0	0.0	0.0	0.0	0.0	2.2	6.5	10.8	0.0	0.0	0.0	0.0	0.0	1.5	1.8	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	–	0.0	0.0	–
2004-07	0.0	0.0	0.0	0.0	0.0	13.5	0.0	5.5	13.9	5.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2004-08	0.0	4.0	0.0	0.0	–	–	0.0	0.0	0.0	0.0	0.0	16.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2004-09	0.0	0.0	0.0	0.0	–	0.0	0.0	1.7	0.0	0.0	–	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–
2004-10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–	0.0	0.0	8.0	4.8	0.0	–	–	62.0
2004-11	42.5	0.0	0.0	0.0	0.0	5.6	2.0	0.5	0.0	0.0	0.0	12.0	0.0	0.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–	–	35.8	6.5	1.5	21.8	0.5	4.3	–
2004-12	0.0	5.3	2.8	0.0	18.5	0.0	5.3	1.6	30.5	2.2	0.0	2.2	2.7	0.0	57.0	1.5	93.8	0.0	0.0	0.0	1.2	2.6	22.0	8.5	12.0	20.5	7.5	43.5	57.7	25.6	0.0
2005-01	0.0	30.5	0.0	0.9	0.0	0.0	6.8	0.0	16.8	0.0	6.5	0.0	3.0	6.8	37.0	0.6	24.0	0.0	0.0	3.7	0.0	7.5	0.0	0.0	32.5	0.0	42.0	10.0	12.7	0.0	0.0
2005-02	0.0	0.0	0.0	1.5	0.0	10.0	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.5	0.0	0.0	–	0.0	0.0	0.0	0.0	0.0	0.0	33.0	16.0	13.5	–	–	–
2005-03	9.1	11.0	3.0	0.0	0.0	0.0	0.0	–	0.0	0.0	0.0	70.5	1.5	36.0	0.0	0.0	0.0	0.0	0.0	4.3	0.0	0.0	2.3	0.0	0.6	2.8	–	0.0	0.0	0.0	0.0
2005-04	0.0	0.0	0.0	0.0	0.0	9.5	0.0	4.8	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	0.8	2.0	0.8	7.0	–
2005-05	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	19.5	8.5	4.0	0.0	0.0	–	0.0	0.0	0.0	0.0	0.0	0.0
2005-06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.5	0.0	17.0	0.0	0.0	0.0	0.0	2.4	2.0	–	
2007-10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.5	0.0	0.0	7.0	8.0	3.3	39.1	0.0	0.0	0.5	0.5	
2007-11	0.5	0.5	22.8	0.0	0.0	5.0	0.0	0.0	0.0	0.0	0.0	53.0	5.7	0.0	3.8	0.0	0.0	0.0	0.0	20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	28.8	0.0	–	
2007-12	0.0	80.0	0.5	55.0	0.0	3.0	7.2	0.0	38.2	5.0	0.0	0.5	3.2	3.5	0.0	0.0	3.1	0.0	2.4	60.0	3.3	32.3	20.4	18.4	112.0	3.7	0.5	0.0	8.0	30.0	15.5

República de Moçambique

Instituto Nacional de Meteorologia

Caixa Postal 256 - MAPUTO
Teleg.: OBSERTOR - Telefs.: 490064-490148-492530 - Fax: 491150 - Telex: SMMMP 6-259

Nº216-11/DOR-DAD

Maputo, 04 de Agosto de 2011

A
Administração Nacional de Estradas
Att.:Évarusto Mussupai

MAPUTO

Estação: Ile

Período: 2010 – 2011

Elemento: Precipitação total diária (das 9 às 9h, em mm)

Ano/Mês	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
2010-06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	19.6	0.0	0.0	0.0	0.0	0.0	0.0	4.8	0.0	0.0	0.0	0.0	0.0	4.3	0.0	8.1	0.0	0.0	0.0	0.0	–
2010-07	0.0	0.0	0.0	0.0	0.0	0.0	–	–	0.0	0.0	0.0	8.8	0.0	0.0	0.0	0.0	0.0	8.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.0	0.0
2010-08	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	3.4	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2010-09	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–
2010-10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.9	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.5	6.2	5.4	0.0	0.0	0.0	13.0
2010-11	0.0	0.0	0.0	0.0	18.3	0.0	0.0	0.0	0.0	0.0	0.0	22.9	0.0	15.6	0.0	0.0	0.0	7.9	0.0	0.0	0.0	0.0	0.0	–	0.0	0.0	0.0	0.0	0.0	0.0	–
2010-12	0.0	5.4	2.0	15.0	11.2	0.0	2.3	0.0	0.0	9.6	0.0	0.0	4.5	0.0	0.0	3.2	46.5	0.7	36.2	17.5	4.1	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.0	1.3	0.0
2011-01	0.0	0.0	0.0	0.0	0.0	0.0	9.3	0.8	0.0	0.0	9.5	0.0	0.0	0.0	0.0	0.3	1.6	9.0	0.0	10.0	0.1	0.0	0.0	9.9	0.8	20.8	5.5	36.6	0.0	1.5	0.0
2011-02	0.0	1.1	0.0	4.3	28.2	10.9	0.0	5.5	14.9	1.8	0.0	23.2	0.0	2.5	0.0	0.0	56.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	38.1	58.6	1.3	–	–	–
2011-03	0.0	–	0.0	0.0	0.9	8.4	8.2	0.0	0.0	0.0	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.8	0.0	0.0	0.0	7.3	8.5	0.3
2011-04	0.0	0.0	0.0	0.0	10.0	12.2	0.0	0.0	0.0	0.0	0.0	0.9	0.2	2.6	0.0	0.0	8.6	0.0	0.0	0.0	1.9	0.8	0.0	0.0	107.8	0.0	4.2	0.0	0.0	0.0	–
2011-05	5.1	3.5	–	4.9	0.0	0.0	0.0	0.0	1.9	6.4	2.2	3.7	0.0	0.0	–	–	0.0	0.0	0.0	0.0	4.5	0.0	0.0	2.2	10.0	0.0	0.0	0.0	0.0	0.0	0.0
2011-06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.0	1.5	0.0	0.0	0.0	0.0	0.0	15.5	2.3	0.0	0.0	0.0	4.4	0.0	0.0	0.0	0.0	0.0	–

Estação: Cuamba

Elemento: Precipitação total diária (em mm)

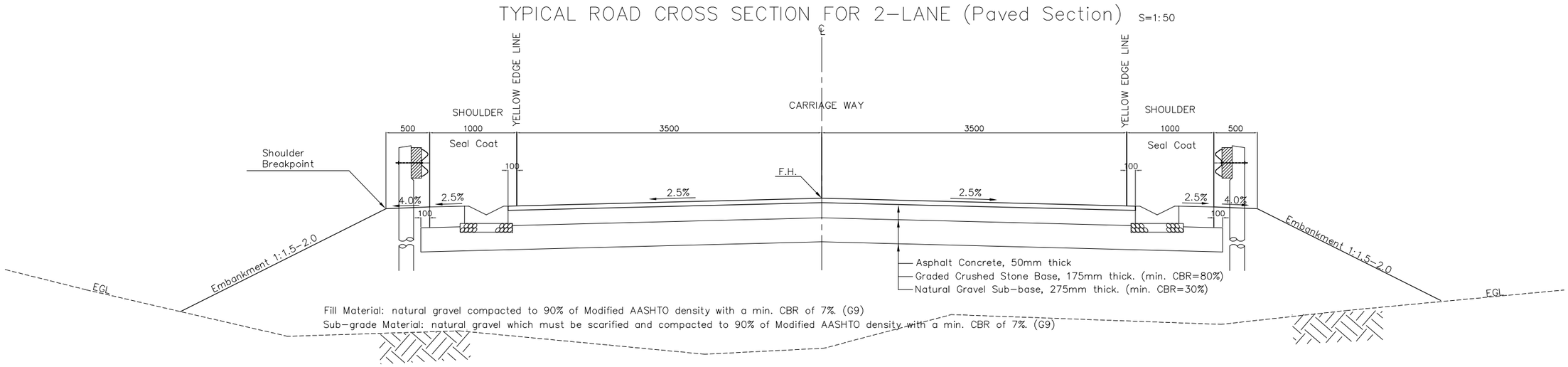
Ano/Mês	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
2010-06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–
2010-07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2010-08	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2010-09	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–
2010-10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.2	0.0	2.8	0.5	20.8	0.0	5.5	0.0	0.0	0.0	6.9	0.0	0.0	0.0	0.0
2010-11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.7	69.3	83.8	2.8	5.4	0.0	0.0	–
2010-12	4.9	11.1	17.8	0.0	0.0	0.6	1.7	0.0	2.4	3.0	0.7	29.7	1.1	85.0	0.0	21.7	0.0	65.8	15.6	17.6	61.4	0.0	0.0	44.4	9.4	5.7	2.1	0.0	0.0	0.0	0.0
2011-01	0.0	0.0	0.0	67.3	8.2	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.1	10.6	0.3	8.7	5.1	5.8	26.0	0.6	3.0	0.0	0.8	3.9	1.4	0.0	0.0	0.1
2011-02	6.1	10.4	3.6	0.0	34.8	2.1	0.0	0.0	7.5	11.4	10.2	5.6	10.3	4.8	0.0	5.2	4.2	0.0	0.0	13.3	0.0	0.0	8.5	0.3	2.8	1.4	1.7	–	–	–	–
2011-03	0.4	2.2	6.4	35.0	13.5	0.4	0.0	0.9	0.0	3.1	0.0	0.0	0.0	0.0	0.0	0.0	19.1	10.3	0.0	38.3	21.1	48.6	24.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6
2011-04	0.0	23.6	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–
2011-05	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2011-06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–

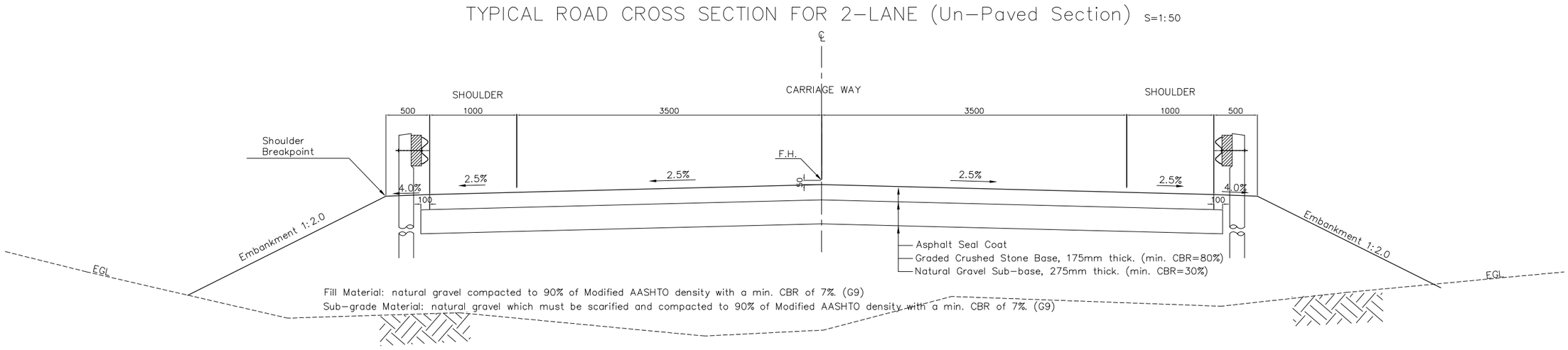
Estação: Gurué

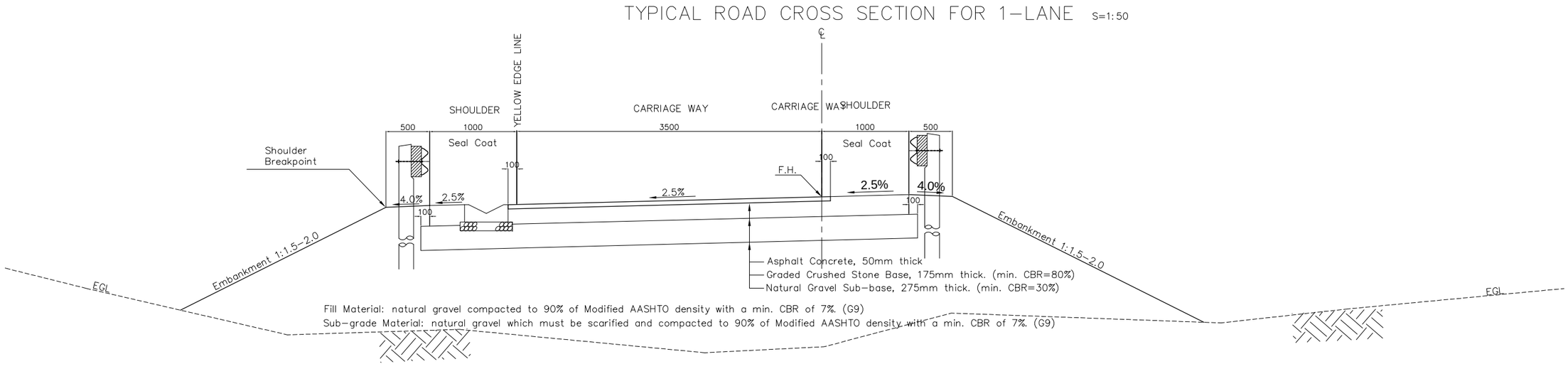
Elemento: Temperatura máxima diária (em °C)

Ano/Mês	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
2010-06	23.2	10.2	3.8	9.0	0.0	0.0	0.0	0.0	0.0	2.2	6.5	10.8	0.0	0.0	0.0	0.0	0.0	1.5	1.8	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	–	0.0	0.0	–
2010-07	0.0	0.0	0.0	0.0	0.0	13.5	0.0	5.5	13.9	5.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2010-08	0.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2010-09	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	0.0	0.0	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–
2010-10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	0.0	0.0	8.0	4.8	0.0	0.9	12.3	62.0
2010-11	42.5	0.0	0.0	0.0	5.8	2.0	0.5	0.0	0.0	0.0	0.0	12.0	0.0	0.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.5	3.5	35.8	6.5	1.5	21.8	0.5	4.3	32.5
2010-12	0.0	5.3	2.8	0.0	18.5	0.0	5.3	1.6	30.5	2.2	0.0	2.2	2.7	0.0	57.0	1.5	93.8	0.0	0.0	0.0	1.2	2.6	22.0	8.5	12.0	20.5	7.5	43.5	57.7	25.6	0.0
2011-01	0.0	30.5	0.0	0.9	0.0	0.0	6.8	0.0	16.8	0.0	6.5	0.0	3.0	6.8	37.0	0.6	24.0	0.0	0.0	3.7	0.0	7.5	0.0	0.0	32.5	0.0	42.0	10.0	12.7	0.0	0.0
2011-02	0.0	0.0	0.0	1.5	0.0	10.0	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.5	0.0	0.0	–	0.0	0.0	0.0	0.0	0.0	0.0	33.0	16.0	13.5	–	–	–	–
2011-03	9.1	11.0	3.0	0.0	0.0	0.0	0.0	–	0.0	0.0	0.0	70.5	1.5	36.0	0.0	0.0	0.0	0.0	4.3	0.0	0.0	2.3	0.0	0.6	2.8	9.4	0.0	0.0	0.0	0.0	0.0
2011-04	0.0	0.0	0.0	0.0	0.0	9.5	0.0	4.8	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	0.8	2.0	0.8	7.0	–
2011-05	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–	0.0	0.0	0.0	0.0	0.0	0.0	2.0	19.5	8.5	4.0	0.0	0.0	–	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2011-06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.5	0.0	17.0	0.0	0.0	0.0	0.0	2.4	2.0	–

6.6 概略設計図



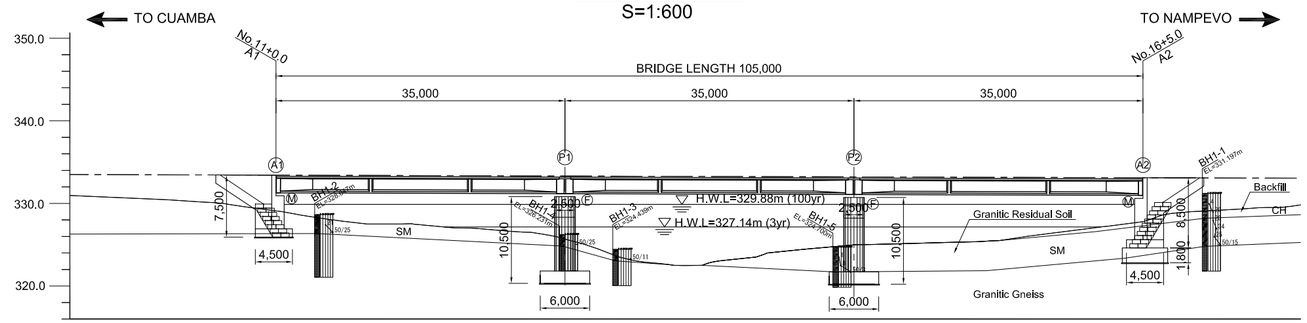




NATIONAL ROADS ADMINISTRATION(ANE)	THE PROJECT FOR CONSTRUCTION OF BRIDGES OF THE ROAD BETWEEN ILE AND CUAMBA	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	TITLE	SCALE	DATE	DRAWING NO.
			Typical Cross Section for the Approach Roads	S=1:50		

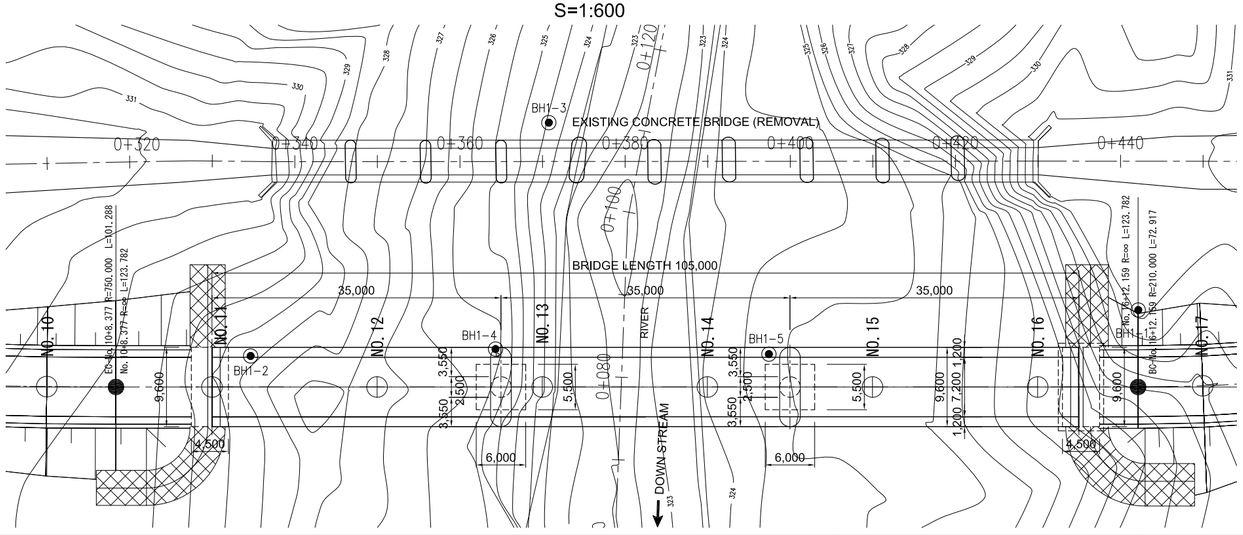
GENERAL VIEW OF MUTABASSE

ELEVATION
S=1:600

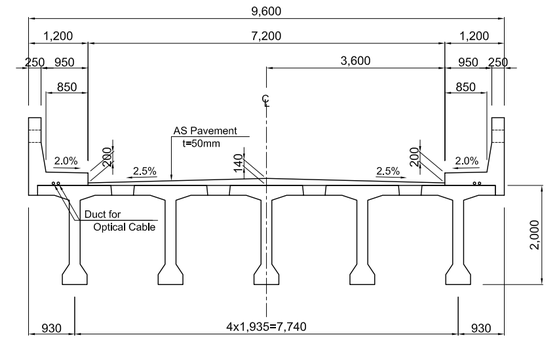


GRANDIENT	332.887 No.9+10.0	VCL=91m K=18	i=-0.300% L=280.004m												VCL=121m K=19	332.248 No.17+10.0	
PROPOSED HEIGHT	333.476	333.451	333.417	333.356	333.312	333.296	333.236	333.207	333.177	333.117	333.102	333.080	333.057				
GRAND LEVEL	330.737	330.337	329.092	327.178	325.679	324.098	324.047	324.977	325.240	327.158	327.786	329.057	329.488				
DISTANCE	20.000	8.377	11.623	20.000	15.000	5.000	20.000	10.000	10.000	20.000	5.000	7.159	7.841				
CHAINAGE	No.10	No.10+8.377	A1 No.11	No.12	P1 No.12+15.0	No.13	No.14	P2 No.14+10.0	No.15	No.16	A2 No.16+5.0	No.16+12.159	No.17				

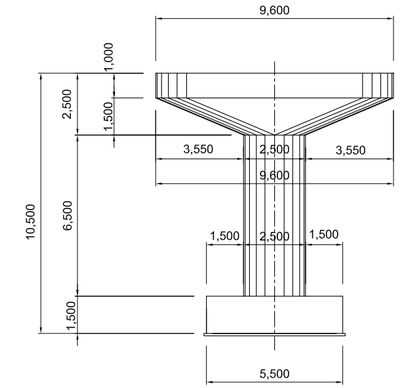
PLAN
S=1:600



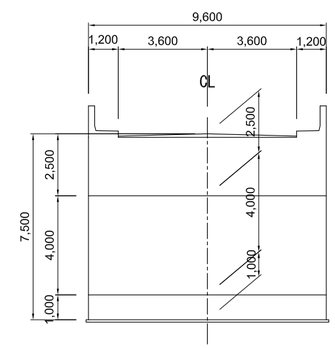
GIRDER SECTION
S=1:100



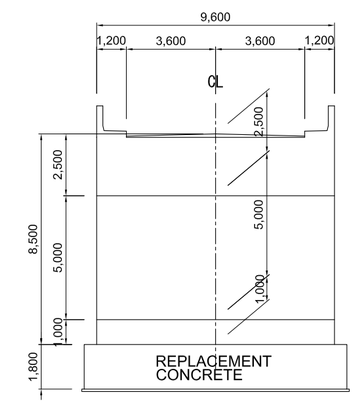
P1,P2 PIER
S=1:200



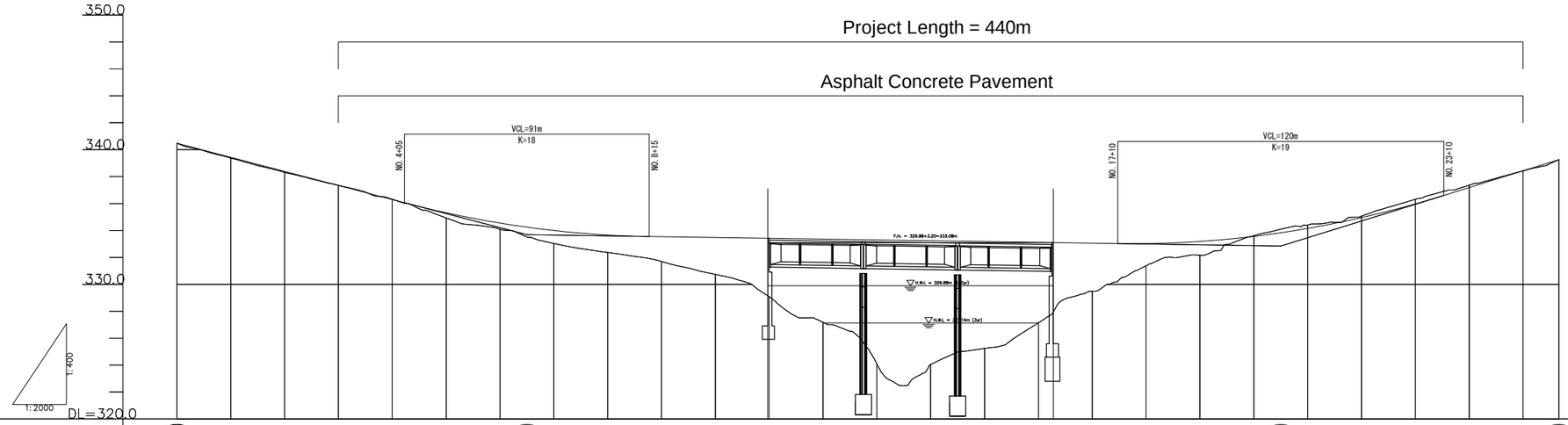
A1 ABUTMENT
S=1:200



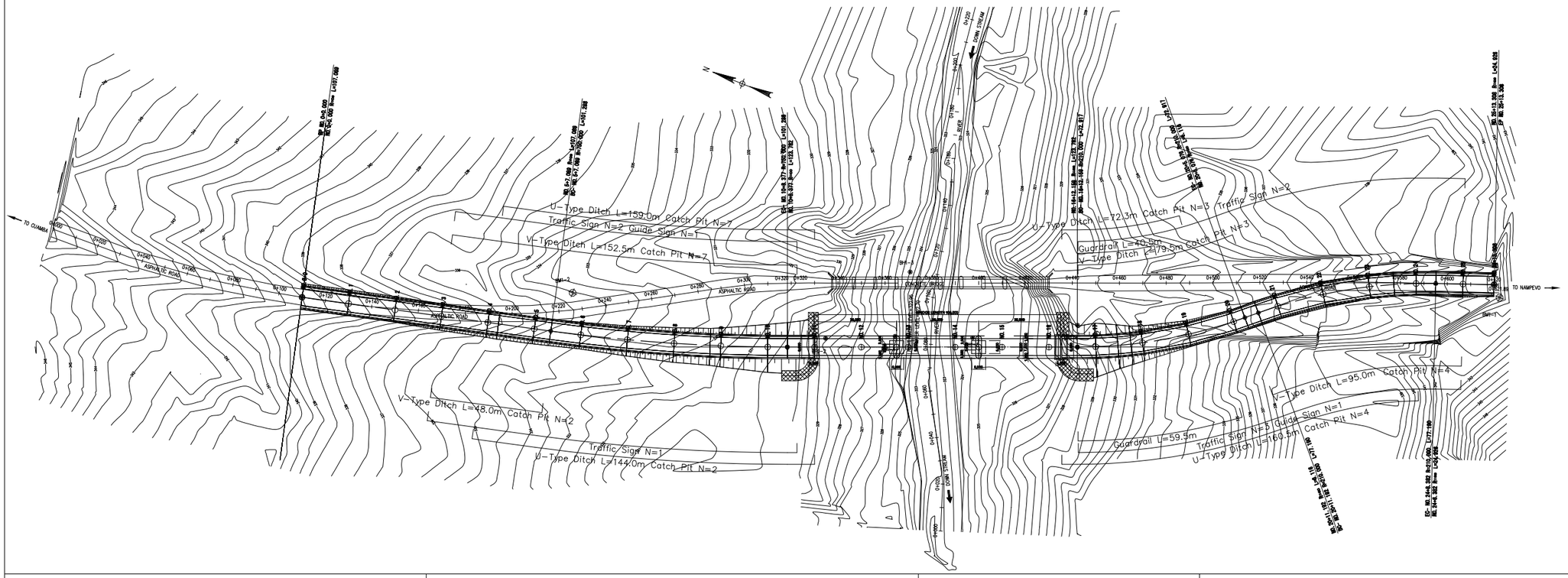
A2 ABUTMENT
S=1:200



NATIONAL ROADS ADMINISTRATION(ANE)	THE PROJECT FOR CONSTRUCTION OF BRIDGES OF THE ROAD BETWEEN ILE AND CUAMBA	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	TITLE	SCALE	DATE	DRAWING NO.
			GENERAL VIEW OF MUTABASSE	AS SHOWN		



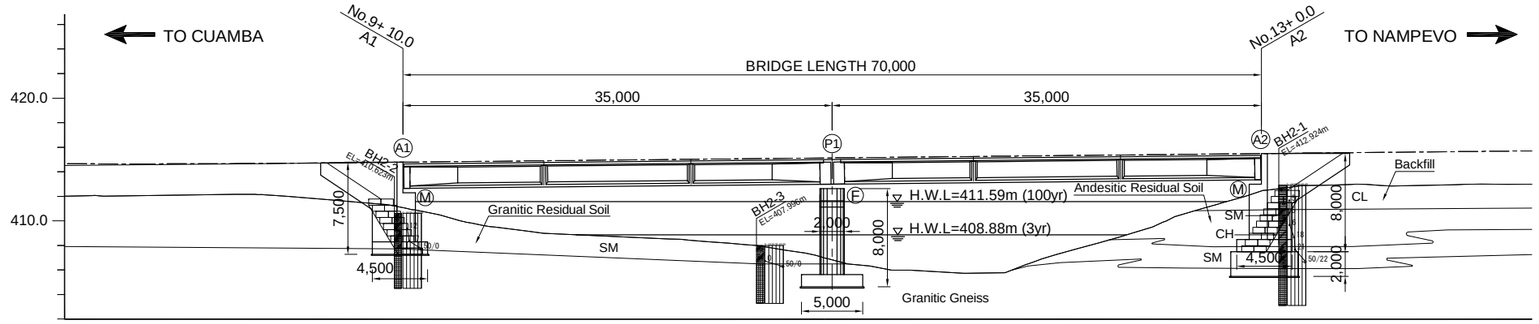
Gradient	340.478	i=-5.225% L=179.971m						333.687	i=-0.300% L=280.004m												332.847	i=6.207% L=103.308m				339.259
Proposed Height		339.434	338.389	337.344	336.299	335.318	334.549	333.997	333.661	333.536	333.476	333.416	333.356	333.296	333.236	333.177	333.117	333.057	333.026	333.187	333.563	334.154	334.959	335.980	337.192	338.433	339.259
Ground Height	340.479	339.373	338.320	337.356	336.319	334.937	334.097	333.031	332.362	331.692	330.737	329.092	327.178	324.098	324.047	325.240	327.158	329.488	331.388	332.163	333.618	334.405	335.066	336.304	337.367	338.433	339.259
Cut				0.012	0.020																0.055	0.252	0.106	0.324	0.176	0.000	0.000
Embankment		0.061	0.069			0.381	0.452	0.966	1.299	1.844	2.739	4.324	6.178	9.198	9.189	7.937	5.959	3.569	1.639	1.025						0.000	0.000
Chainage	NO.0	NO.1	NO.2	NO.3	NO.4	NO.5	NO.6	NO.7	NO.8	NO.9	NO.10	NO.11	NO.12	NO.13	NO.14	NO.15	NO.16	NO.17	NO.18	NO.19	NO.20	NO.21	NO.22	NO.23	NO.24	NO.25	NO.25+13.308



NATIONAL ROADS ADMINISTRATION(ANE)	THE PROJECT FOR CONSTRUCTION OF BRIDGES OF THE ROAD BETWEEN ILE AND CUAMBA	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	TITLE	SCALE	DATE	DRAWING NO.
			Plan and Profile for Br.No.1 (Mutabasse)			

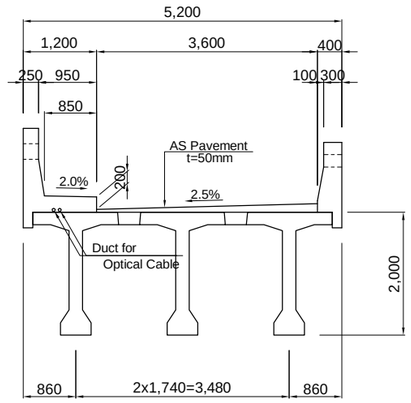
GENERAL VIEW OF MULIQUELA

ELEVATION
S=1:500

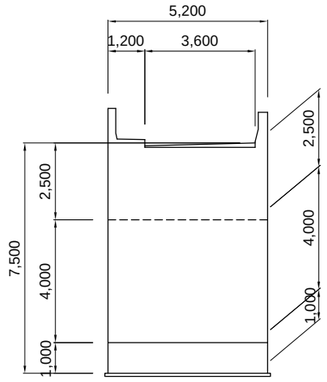


GRANDIENT	414.096 No.6+0.0	VCL=130m K=18						i=1.000% L=225.000m					VCL=110m K=18	416.345 No.17+5.0
PROPOSED HEIGHT		414.702	414.795	414.895	415.095	415.145	415.295		415.495				415.695	
GRAND LEVEL		412.049	411.077	409.186	407.825	406.837	406.135		412.456				412.993	
DISTANCE		20.000	10.000	10.000	20.000	5.000	15.000		20.000				20.000	
CHAINAGE		No.9	A1 No.9+10.0	No.10	No.11	P1 No.11+5.0	No.12		A2 No.13				No.14	

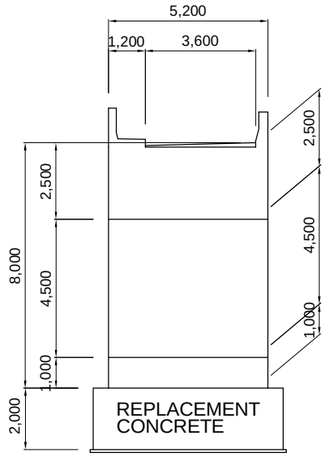
GIRDER SECTION
S=1:100



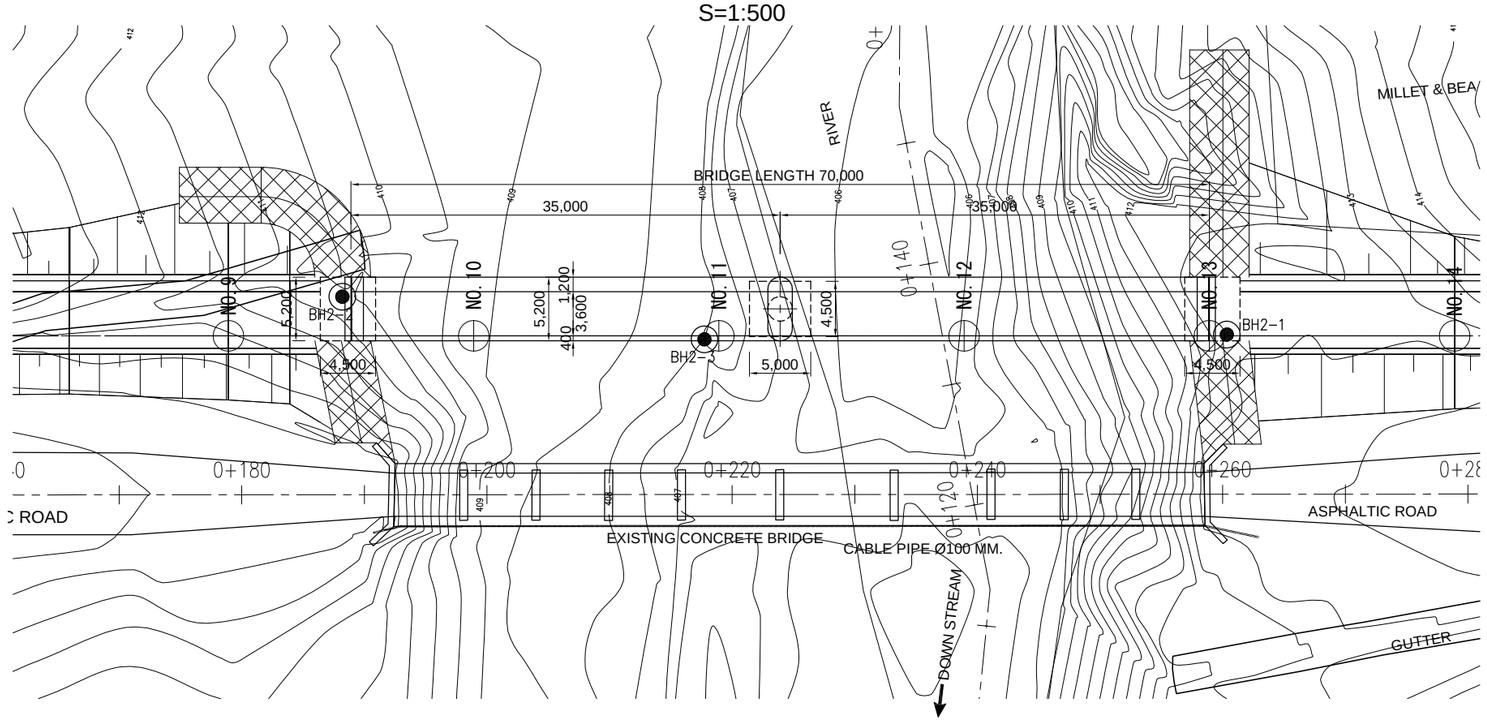
A1 ABUTMENT
S=1:200



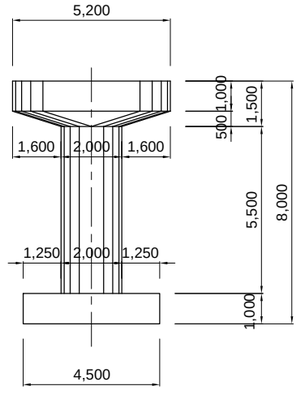
A2 ABUTMENT
S=1:200



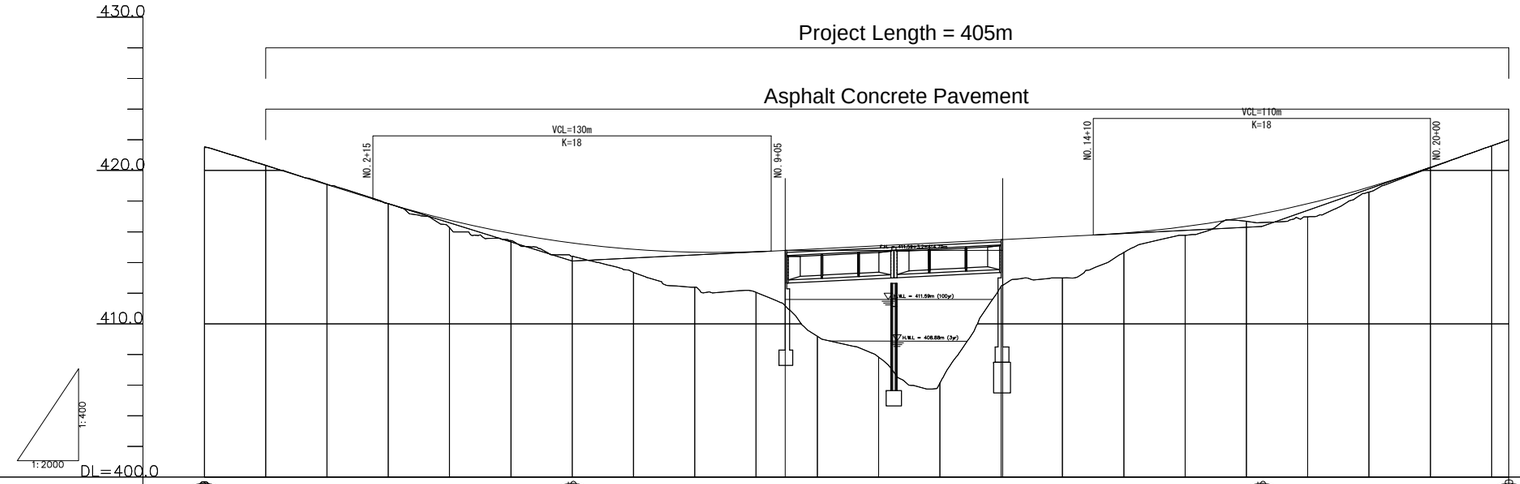
PLAN
S=1:500



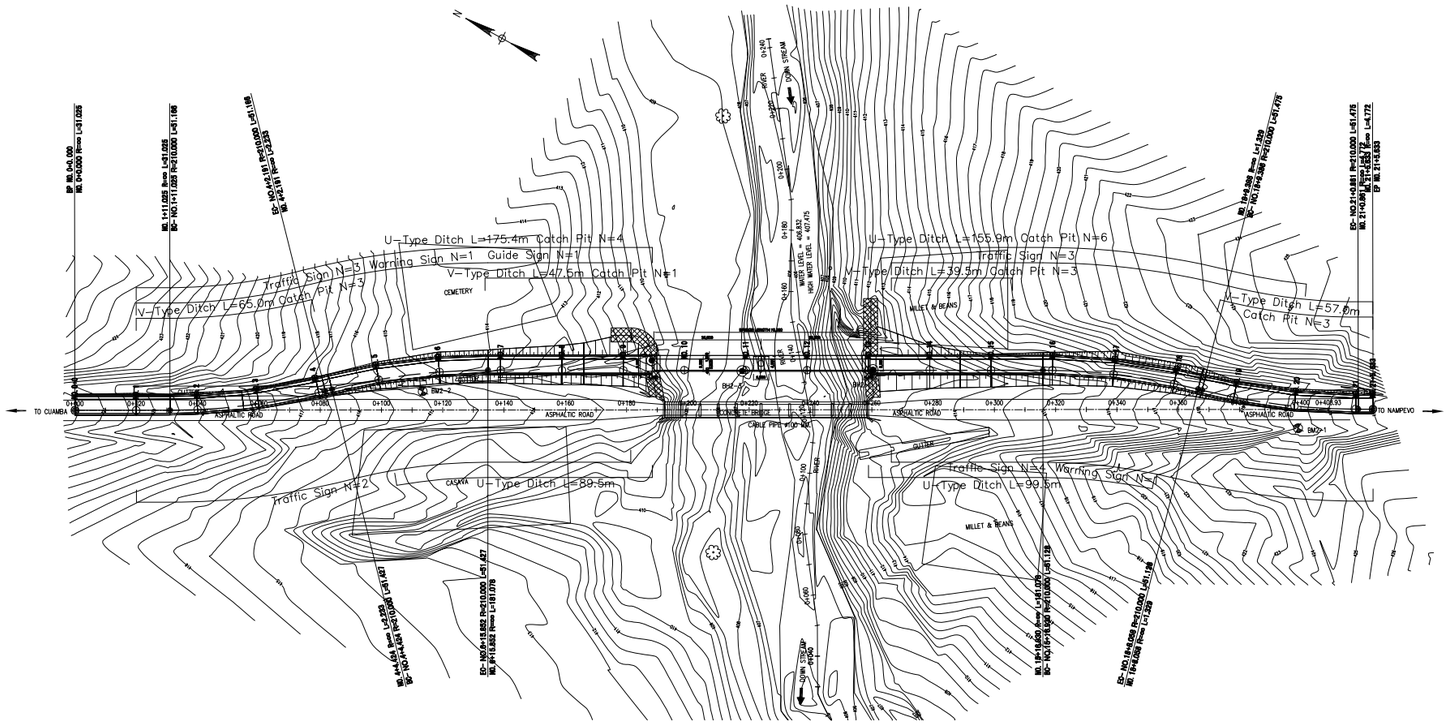
P1 PIER
S=1:200



NATIONAL ROADS ADMINISTRATION(ANE)	THE PROJECT FOR CONSTRUCTION OF BRIDGES OF THE ROAD BETWEEN ILE AND CUAMBA	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	TITLE	SCALE	DATE	DRAWING NO.
			GENERAL VIEW OF MULIQUELA	AS SHOWN		



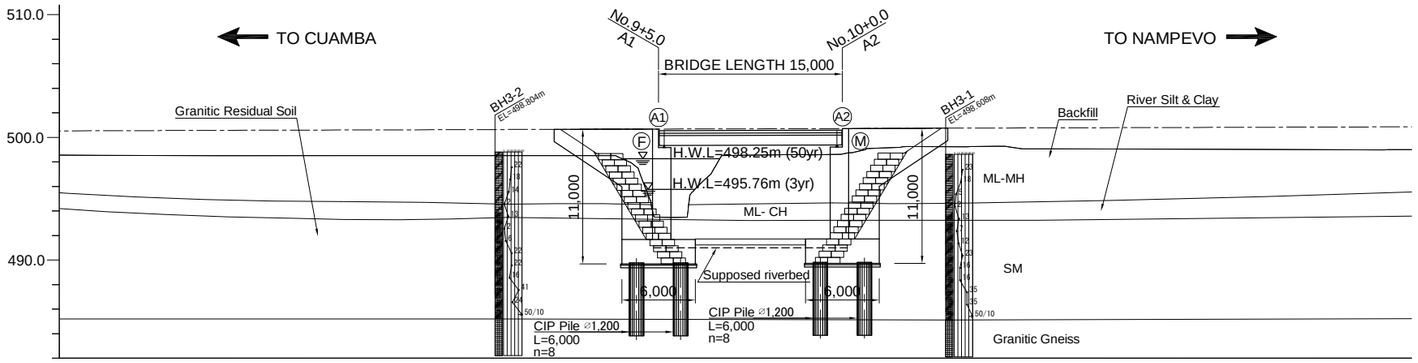
Gradient	421.569	i=-6.229% L=120.000m					414.095	i=1.000% L=225.080m									416.345	i=7.013% L=80.633m				422.000	
Proposed Height	421.569	420.324	419.078	417.839	416.760	415.904	415.270	414.858	414.669	414.702	414.895	415.095	415.295	415.495	415.695	415.922	416.341	416.978	417.834	418.909	420.202	421.605	422.000
Ground Height	421.500	420.341	419.108	417.833	416.272	415.438	414.408	413.346	412.378	412.049	409.186	407.825	406.135	412.456	412.993	414.656	415.774	416.684	416.981	418.595	420.168	421.610	422.000
Cut		0.018	0.031																			0.006	0.000
Embankment	0.069			0.006	0.488	0.466	0.862	1.512	2.290	2.653	5.709	7.270	9.160	3.039	2.702	1.266	0.567	0.294	0.854	0.314	0.034		
Chainage	NO.0	NO.1	NO.2	NO.3	NO.4	NO.5	NO.6	NO.7	NO.8	NO.9	NO.10	NO.11	NO.12	NO.13	NO.14	NO.15	NO.16	NO.17	NO.18	NO.19	NO.20	NO.21	NO.21+5.330.000



NATIONAL ROADS ADMINISTRATION(ANE)	THE PROJECT FOR CONSTRUCTION OF BRIDGES OF THE ROAD BETWEEN ILE AND CUAMBA	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	TITLE	SCALE	DATE	DRAWING NO.
			Plan and Profile for Br.No.2 (Muliquela)			

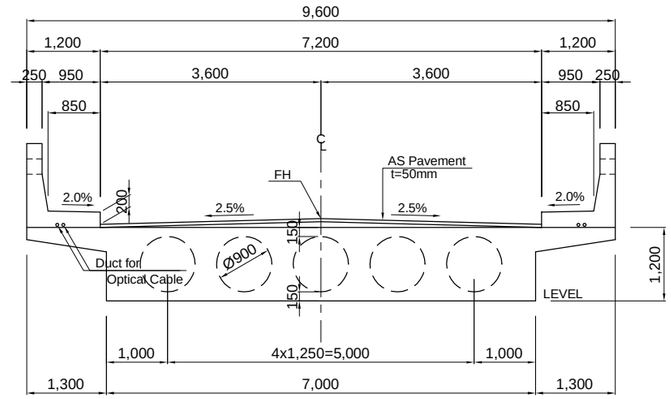
GENERAL VIEW OF MATACASSE

ELEVATION
S=1:500

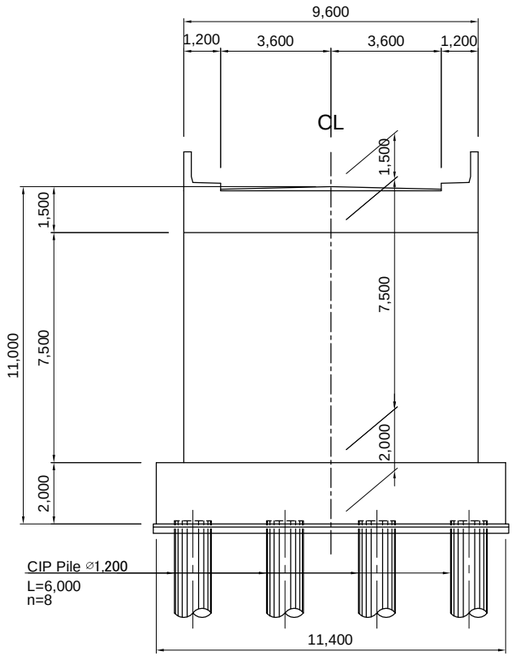


GRANDIENT	VCL=100m K=19		i=0.300% L=245.000m			VCL=100m K=18	
PROPOSED HEIGHT	500.538	500.598	500.658	500.673	500.718	500.778	500.838
GRAND LEVEL	498.528	498.504	498.500	493.493	498.641	499.049	499.002
DISTANCE	20.000	20.000	20.000	5.000	15.000	20.000	20.000
CHAINAGE	No.7	No.8	No.9	A1 No.9+5.0	A2 No.10	No.11	No.12

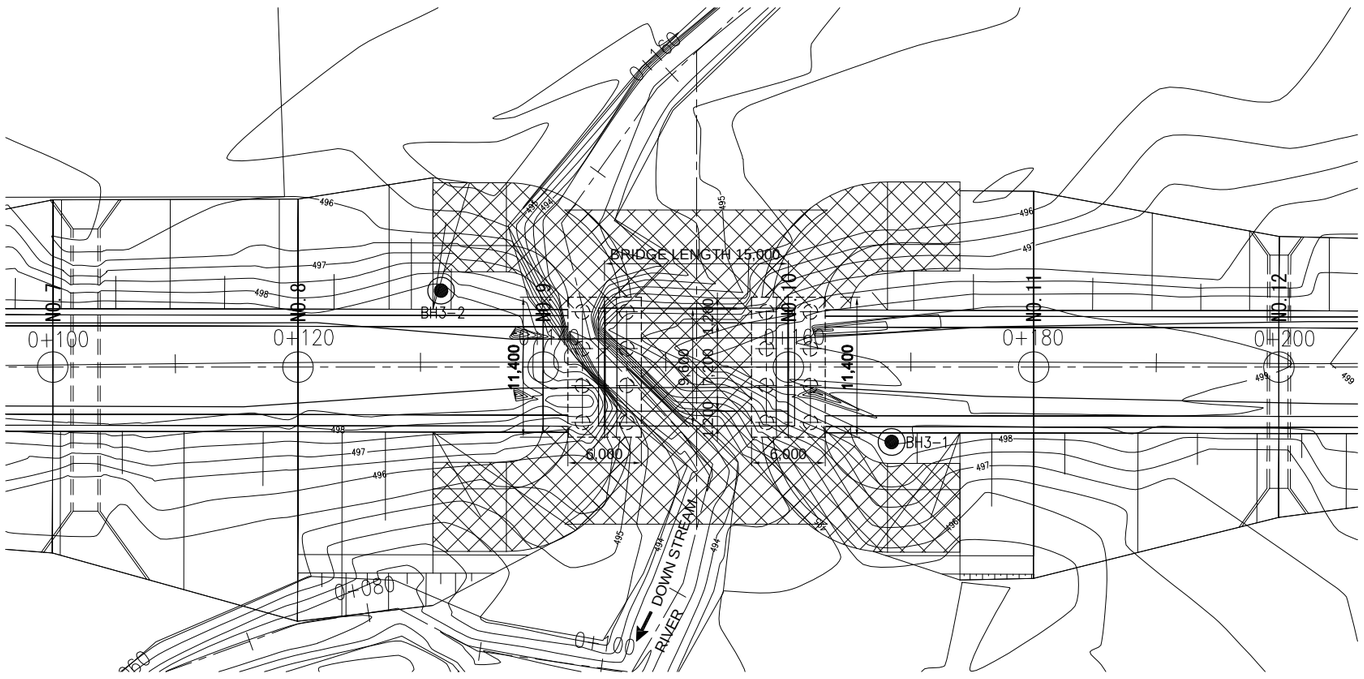
GIRDER SECTION
S=1:100



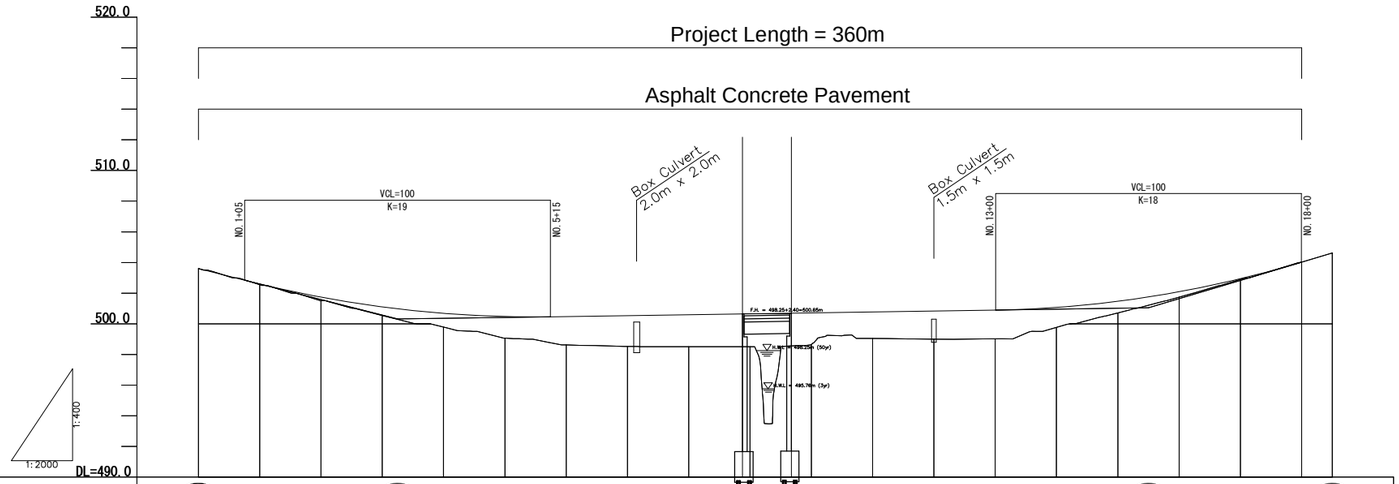
A1,A2 ABUTMENT
S=1:200



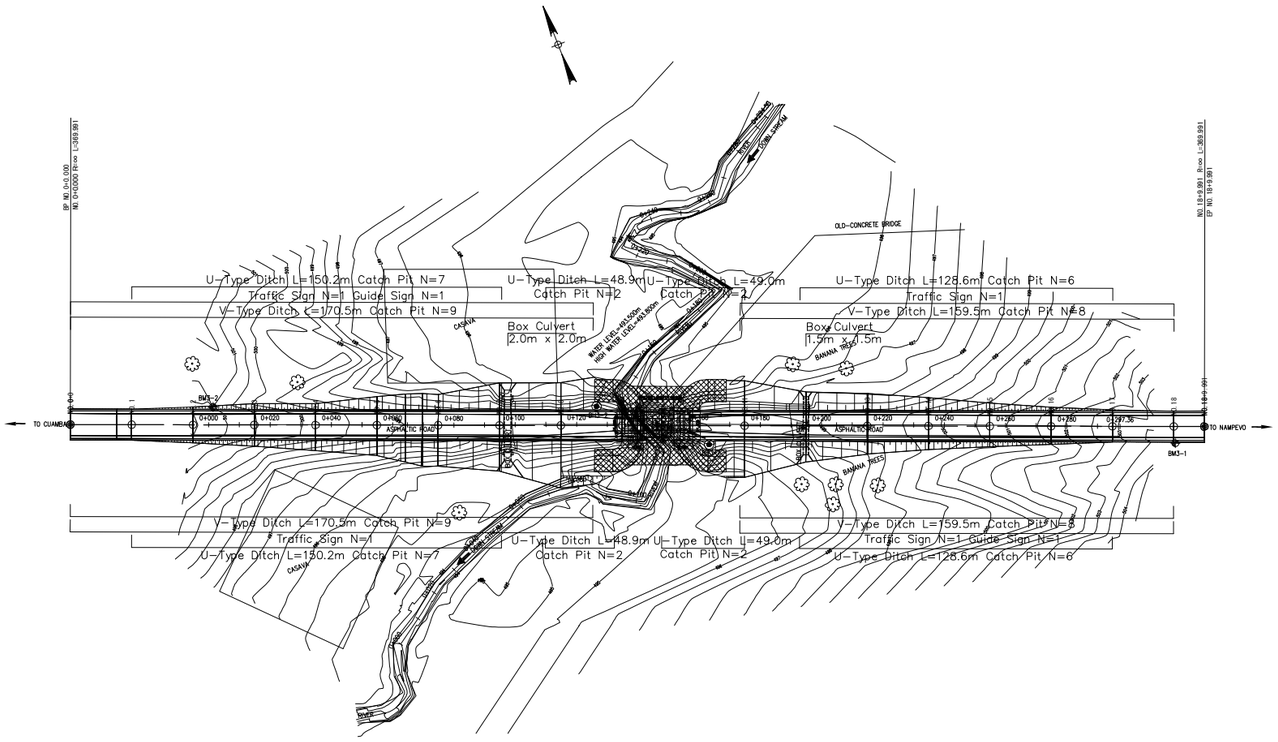
PLAN
S=1:500



NATIONAL ROADS ADMINISTRATION(ANE)	THE PROJECT FOR CONSTRUCTION OF BRIDGES OF THE ROAD BETWEEN ILE AND CUAMBA	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	TITLE	SCALE	DATE	DRAWING NO.
			GENERAL VIEW OF MATACASSE	AS SHOWN		



Gradient	503.605	i=-5.065% L=65.000m	500.313							i=0.300% L=245.000m						501.048	i=5.950% L=59.991m	504.617
Proposed Height	503.605	502.598	501.745	501.107	500.684	500.477	500.478	500.538	500.598	500.658	500.718	500.778	500.838	500.898	501.069	501.468	502.093	502.944	504.023	504.617
Ground Height	503.605	502.548	501.500	500.537	499.784	499.062	498.627	498.528	498.504	498.500	498.641	499.049	499.002	499.014	499.768	500.712	501.741	502.891	504.026	504.617
Cut	0.000																		0.003	0.000
Embankment	0.000	0.050	0.245	0.570	0.901	1.415	1.851	2.010	2.094	2.157	2.076	1.728	1.835	1.884	1.301	0.756	0.351	0.053		0.000
Chainage	NO.0+0.000	NO.1	NO.2	NO.3	NO.4	NO.5	NO.6	NO.7	NO.8	NO.9	NO.10	NO.11	NO.12	NO.13	NO.14	NO.15	NO.16	NO.17	NO.18	NO.18+9.991

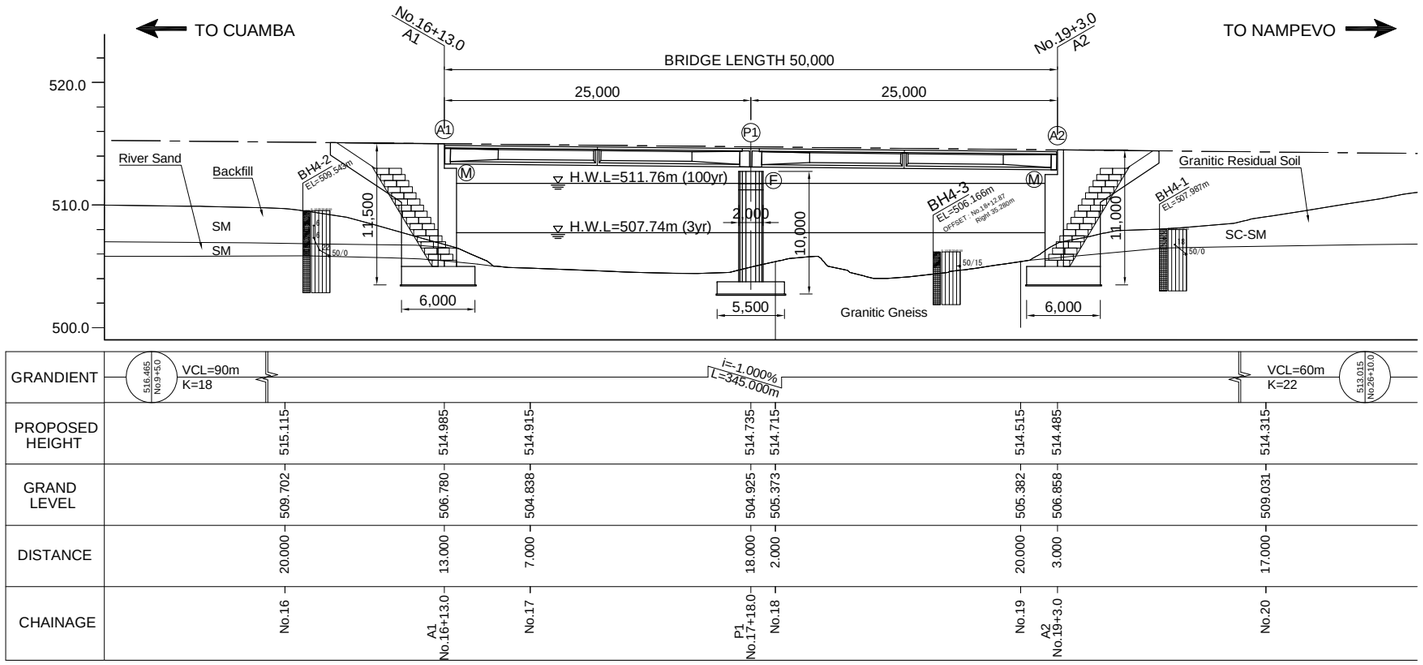


Note:
Topographic data before No.2 and after No.17 is assumed because of luck of topographic survey.
Actual topographic data of these assumed sections will be obtained at detail design stage.

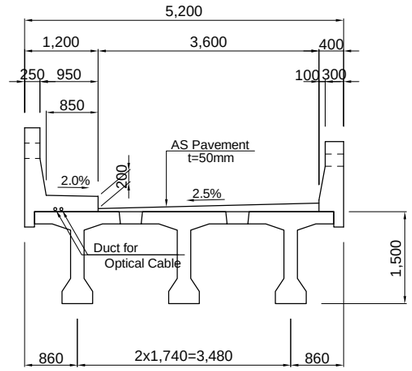
NATIONAL ROADS ADMINISTRATION(ANE)	THE PROJECT FOR CONSTRUCTION OF BRIDGES OF THE ROAD BETWEEN ILE AND CUAMBA	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	TITLE	SCALE	DATE	DRAWING NO.
			Plan and Profile for Br.No.3 (Matacasse)			

GENERAL VIEW OF LUA

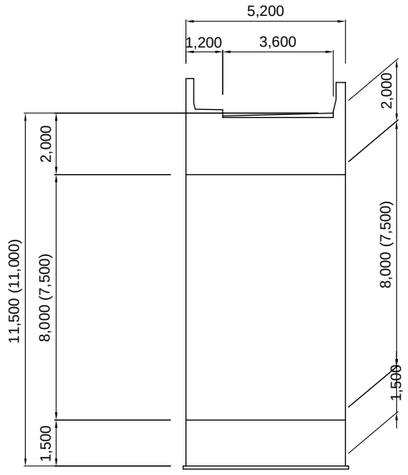
ELEVATION
S=1:500



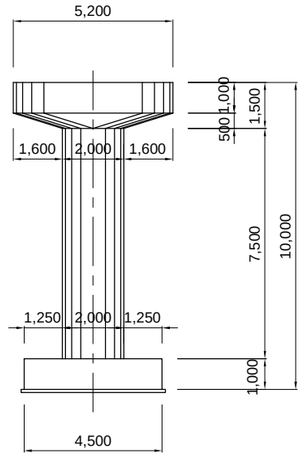
GIRDER SECTION
S=1:100



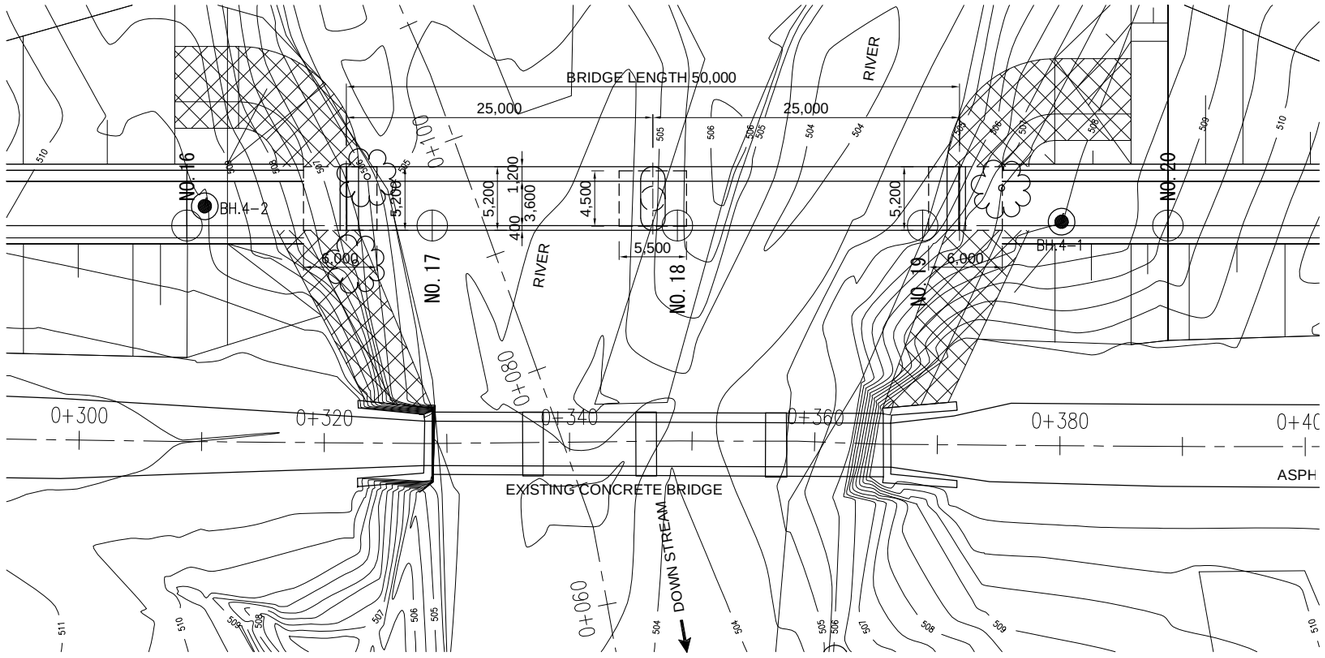
A1(A2) ABUTMENT
S=1:200



P1 PIER
S=1:200

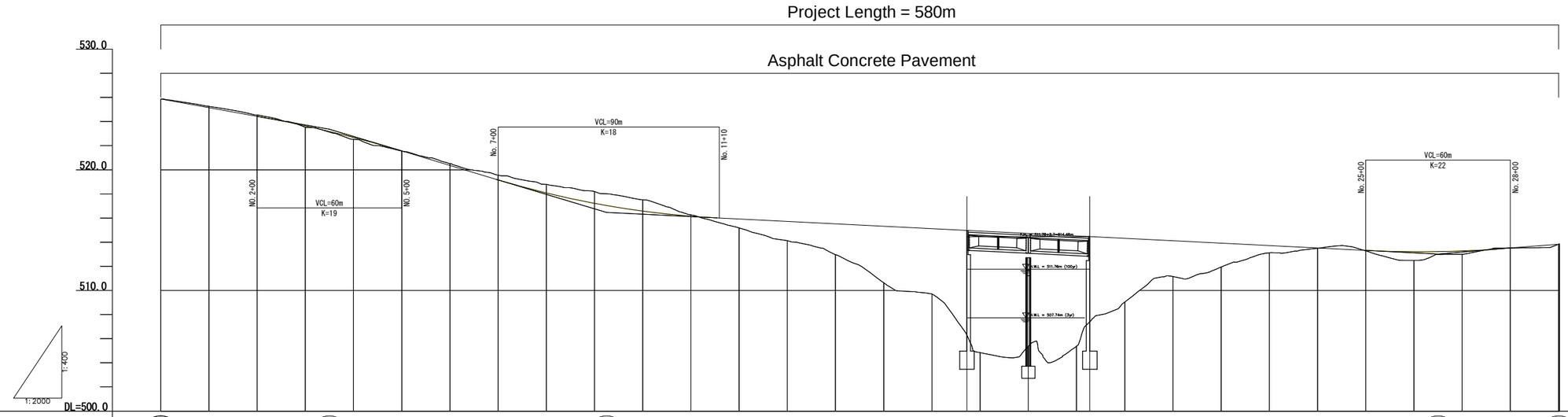


PLAN
S=1:500

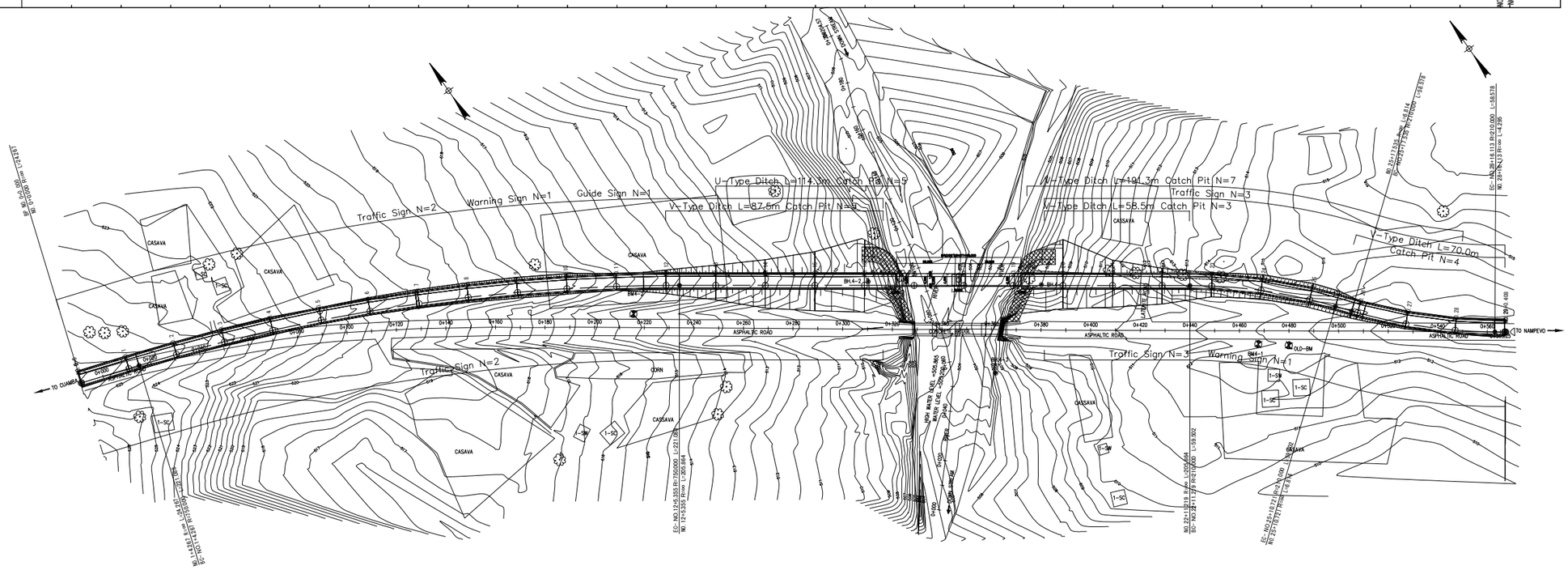


NOTE : The location of Boring hole No. BH4-3 is at 35 m downstream from bridge center line .

NATIONAL ROADS ADMINISTRATION(ANE)	THE PROJECT FOR CONSTRUCTION OF BRIDGES OF THE ROAD BETWEEN ILE AND CUAMBA	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	TITLE	SCALE	DATE	DRAWING NO.
			GENERAL VIEW OF LUA	AS SHOWN		



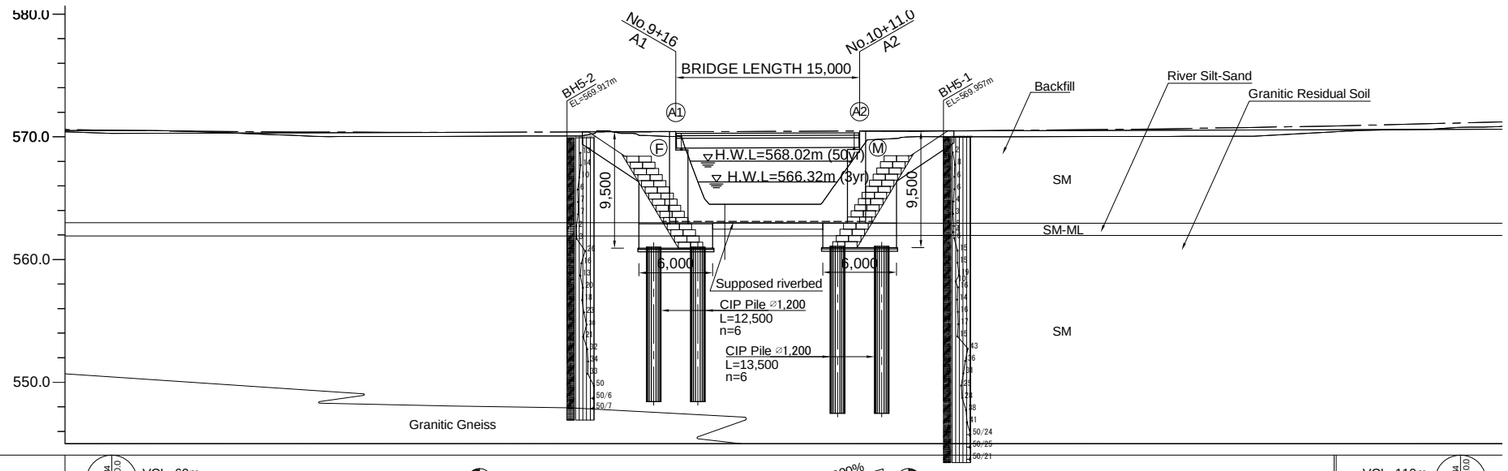
Gradient	525.867	i=-3.574% L=70.000m	523.365	i=-6.000% L=115.000m	516.465	i=-1.000% L=345.000m	513.015	i=1.681% L=50.045m	513.856																							
Proposed Height	525.867	525.152	524.437	523.641	522.684	521.565	520.365	519.165	518.084	517.221	516.575	516.147	515.915	515.715	515.515	515.315	515.115	514.915	514.715	514.515	514.315	514.115	513.915	513.715	513.515	513.315	513.204	513.273	513.519	513.790	513.856	
Ground Height	525.867	525.266	524.541	523.533	522.530	521.550	520.505	519.561	518.787	518.201	517.507	516.264	515.177	514.125	512.968	510.624	509.702	504.838	505.373	505.382	509.031	511.161	511.941	513.111	513.484	513.276	512.489	513.001	513.514	513.560	513.856	
Cut	0.000	0.114	0.104				0.140	0.396	0.703	0.980	0.932	0.117																				
Embankment	0.000			0.108	0.155	0.015							0.738	1.590	2.547	4.681	5.413	10.077	9.342	9.133	5.284	2.954	1.974	0.604	0.031	0.039	0.716	0.271	0.005	0.230	0.030	
Chainage	NO.0	NO.1	NO.2	NO.3	NO.4	NO.5	NO.6	NO.7	NO.8	NO.9	NO.10	NO.11	NO.12	NO.13	NO.14	NO.15	NO.16	NO.17	NO.18	NO.19	NO.20	NO.21	NO.22	NO.23	NO.24	NO.25	NO.26	NO.27	NO.28	NO.28+16.113	NO.29+0.408	



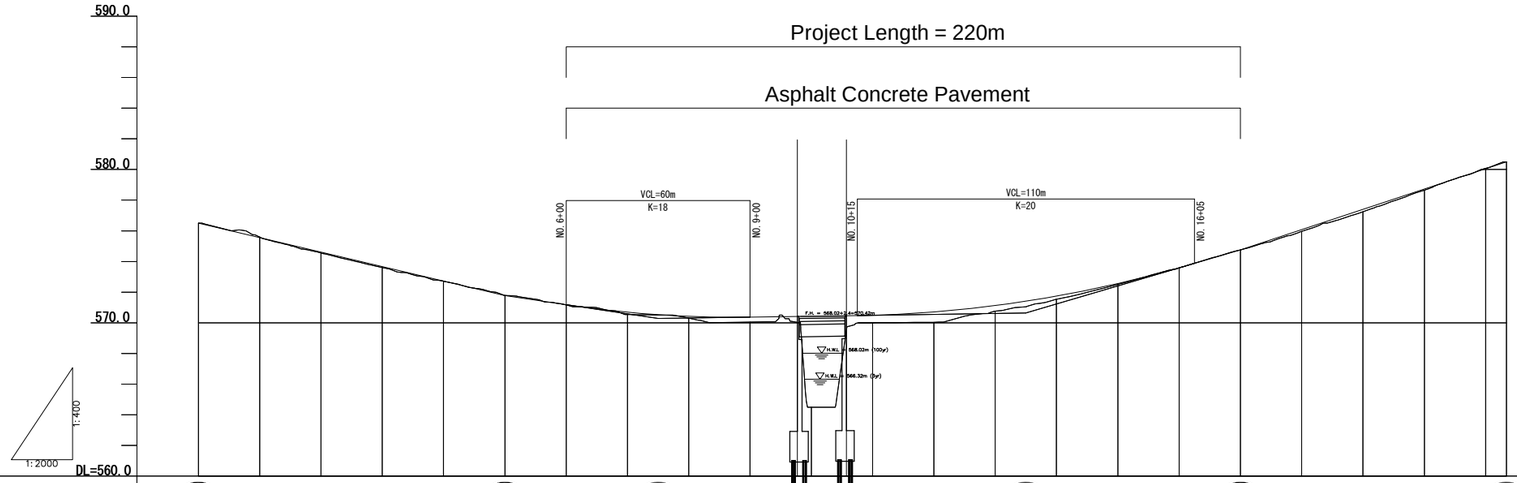
NATIONAL ROADS ADMINISTRATION(ANE)	THE PROJECT FOR CONSTRUCTION OF BRIDGES OF THE ROAD BETWEEN ILE AND CUAMBA	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	TITLE	SCALE	DATE	DRAWING NO.
			Plan and Profile for Br.No.4 (Lua)			

GENERAL VIEW OF UALASSE

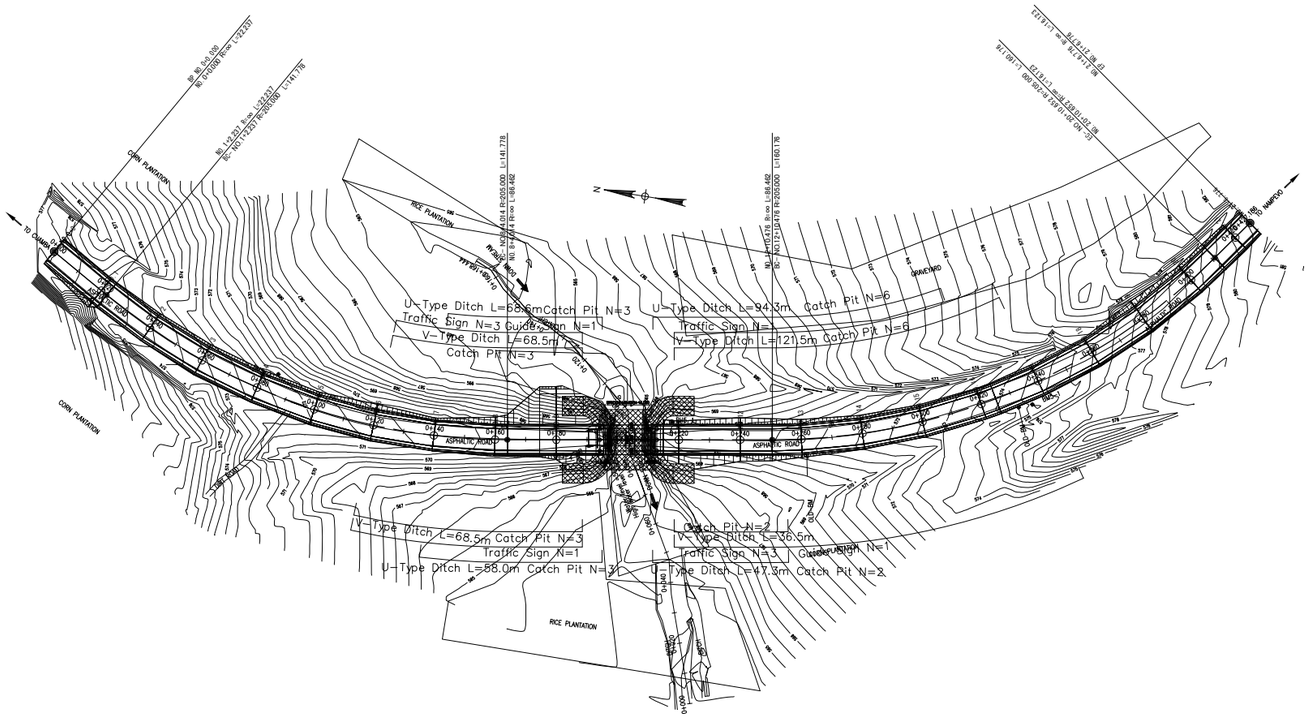
ELEVATION
S=1:500



| | | |



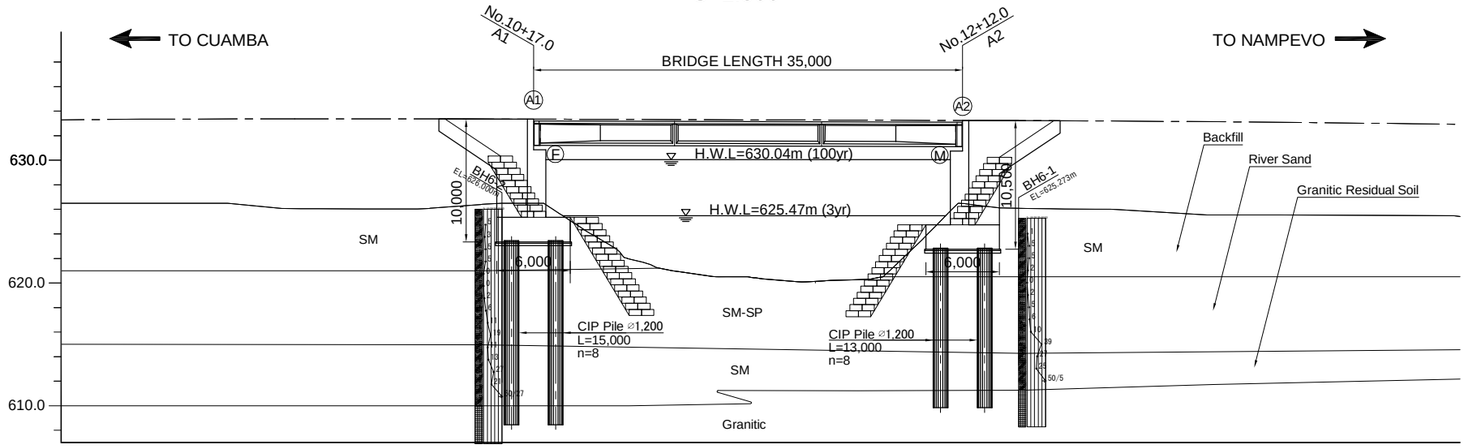
Gradient	576.500	i=-4.716% L=100.000m	571.784	i=-3.001% L=50.000m	570.284	i=0.[illegible]% L=[illegible]00m	570.644	i=5.875% L=70.000m	574.756	i=6.619% L=86.776m	580.500										
Proposed Height	576.500	575.557	574.614	573.670	572.727	571.784	571.184	570.694	570.424	570.374	570.434	570.500	570.712	571.127	571.744	572.564	573.587	574.756	576.080	577.404	578.728	579.433	580.052
Ground Height	576.502	575.595	574.557	573.608	572.712	571.784	571.159	570.534	570.308	570.052	564.498	570.005	570.038	570.767	571.531	572.509	573.581	574.756	575.965	577.248	578.658	579.435	580.072
Cut	0.002	0.038				0.000												0.000				0.002	0.020
Embankment			0.057	0.062	0.015	0.000	0.025	0.160	0.116	0.322	5.936	0.495	0.673	0.359	0.213	0.056	0.007	0.000	0.115	0.156	0.069		
Chainage	NO.0	NO.1	NO.2	NO.3	NO.4	NO.5	NO.6	NO.7	NO.8	NO.9	NO.10	NO.11	NO.12	NO.13	NO.14	NO.15	NO.16	NO.17	NO.18	NO.19	NO.20		NO.21



NATIONAL ROADS ADMINISTRATION(ANE)	THE PROJECT FOR CONSTRUCTION OF BRIDGES OF THE ROAD BETWEEN ILE AND CUAMBA	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	TITLE	SCALE	DATE	DRAWING NO.
			Plan and Profile for Br.No.5 (Ualasse)			

GENERAL VIEW OF LICUNGO

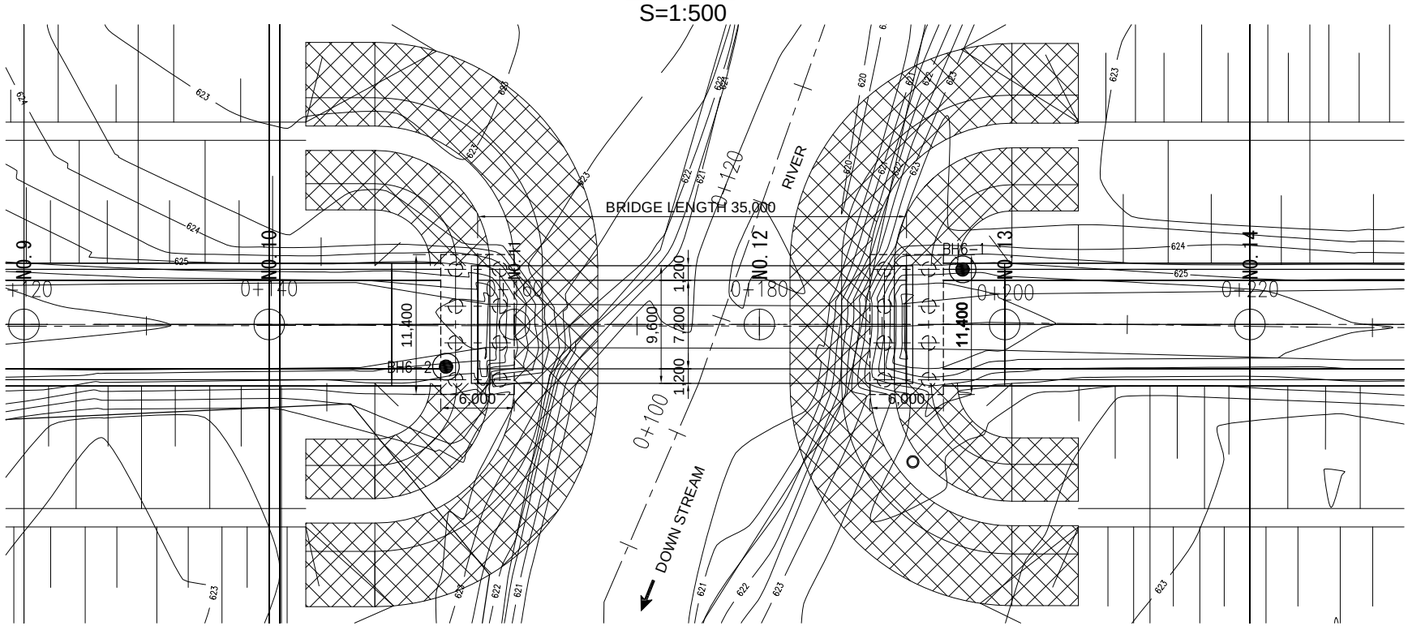
ELEVATION
S=1:500



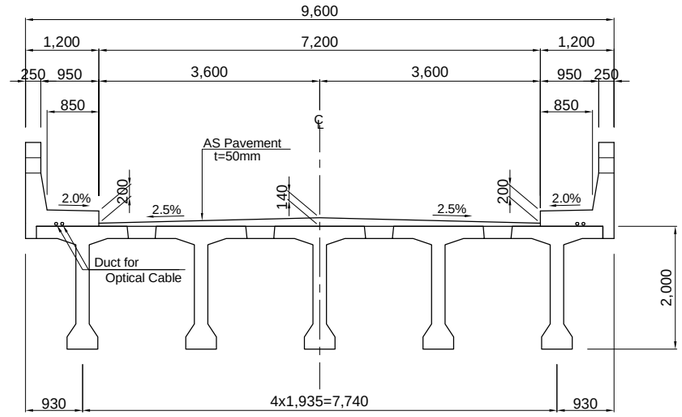
GRANDIENT	633.518 No.9+0.0	VCL=100m K=30																					VCL=90m K=37	633.097 No.15+0.0
PROPOSED HEIGHT	633.310			633.381				633.347	633.338				633.278			633.242		633.214					633.074	
GRAND LEVEL	626.500			626.052				626.500	625.077				620.133			626.472		626.034					625.531	
DISTANCE	20.000			20.000				17.000	3.000				20.000			A2 12.000		8.000					20.000	
CHAINAGE	No.9			No.10				A1 No.10+17.0	No.11				No.12			No.12+12.0		No.13					No.14	

i=-0.300%
L=140.000m

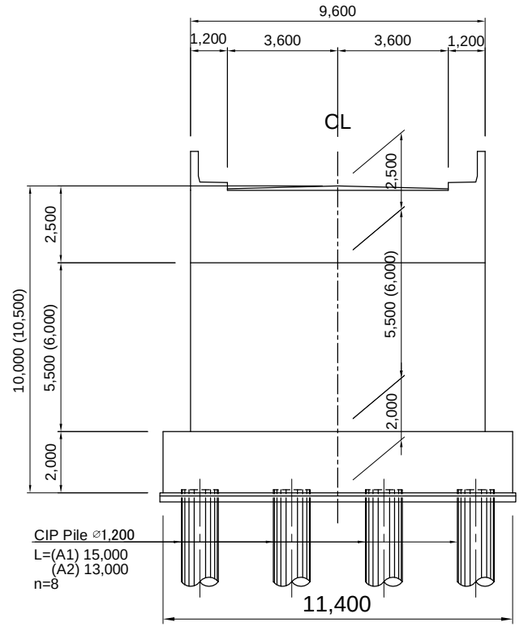
PLAN
S=1:500



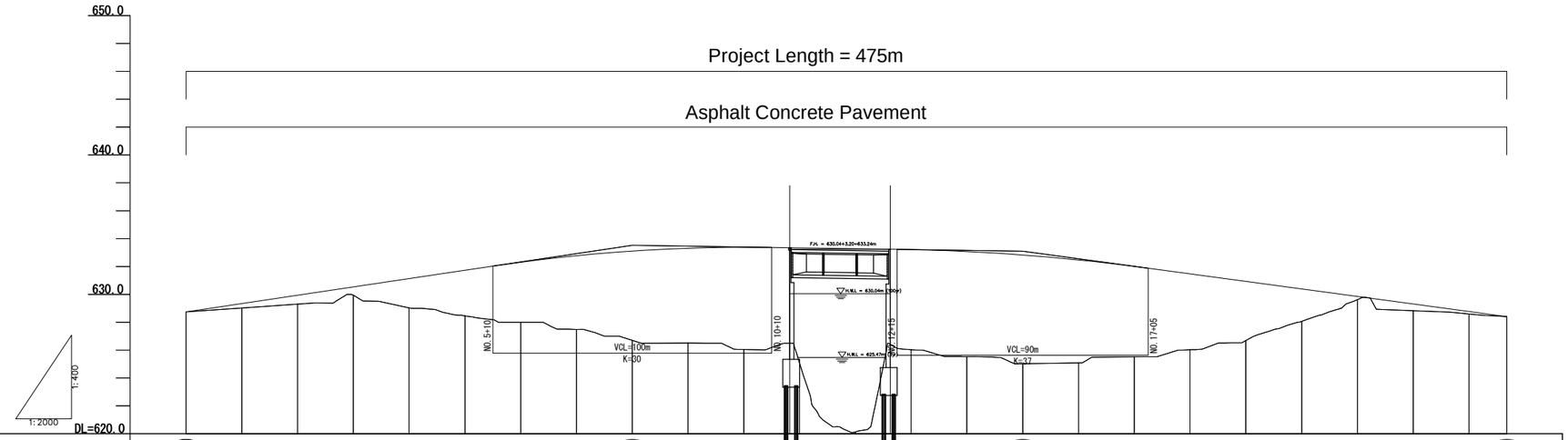
GIRDER SECTION
S=1:100



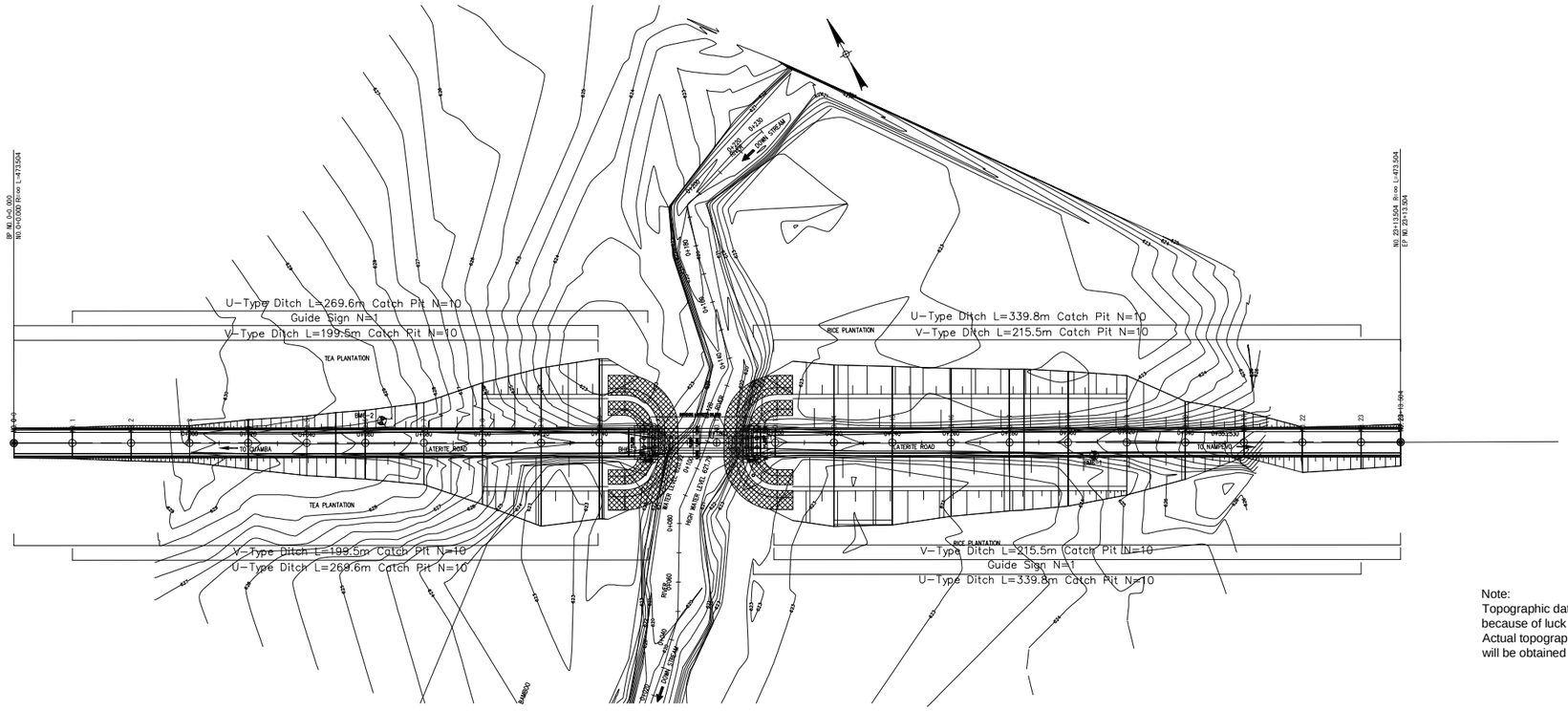
A1(A2) ABUTMENT
S=1:200



NATIONAL ROADS ADMINISTRATION(ANE)	THE PROJECT FOR CONSTRUCTION OF BRIDGES OF THE ROAD BETWEEN ILE AND CUAMBA	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	TITLE	SCALE	DATE	DRAWING NO.
			GENERAL VIEW OF LICUNGO	AS SHOWN		



Gradient	628.743	i=2.984% L=160.000m							633.518				i=-0.000% L=140.000m				633.097				i=-2.709% L=173.504m			628.398
Proposed Height	628.743	629.339	629.936	630.533	631.130	631.727	632.307	632.773	633.107	633.310	633.381	633.338	633.278	633.214	633.074	632.827	632.472	632.011	631.472	630.930	630.389	629.847	629.305	628.763	628.398
Ground Height	628.743	629.023	629.304	629.940	629.033	628.466	627.997	627.499	626.710	626.500	626.052	625.077	620.133	626.034	625.531	625.022	625.084	625.519	626.022	626.693	628.056	629.621	628.832	628.590	628.398
Cut	0.000																								0.000
Embankment	0.000	0.316	0.633	0.593	2.097	3.261	4.310	5.274	6.397	6.809	7.329	8.260	13.144	7.180	7.543	7.805	7.388	6.492	5.450	4.237	2.333	0.226	0.473	0.173	0.000
Chainage	NO.0+0.000	NO.1	NO.2	NO.3	NO.4	NO.5	NO.6	NO.7	NO.8	NO.9	NO.10	NO.11	NO.12	NO.13	NO.14	NO.15	NO.16	NO.17	NO.18	NO.19	NO.20	NO.21	NO.22	NO.23	NO.23+13.504

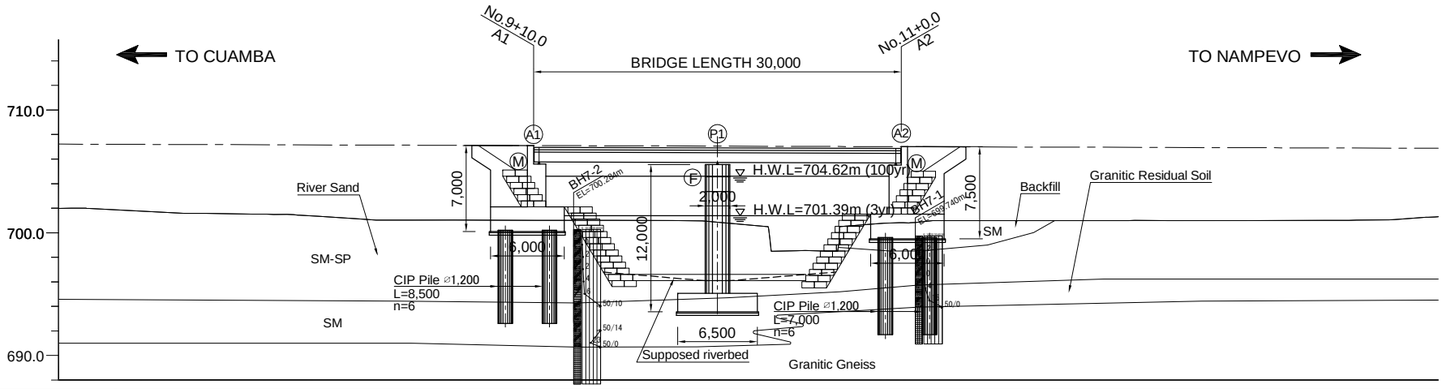


Note:
Topographic data before No.3 and after No.21 is assumed because of luck of topographic survey.
Actual topographic data of these assumed sections will be obtained at detail design stage.

NATIONAL ROADS ADMINISTRATION(ANE)	THE PROJECT FOR CONSTRUCTION OF BRIDGES OF THE ROAD BETWEEN ILE AND CUAMBA	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	TITLE	SCALE	DATE	DRAWING NO.
			Plan and Profile for Br.No.6 (Licungo)			

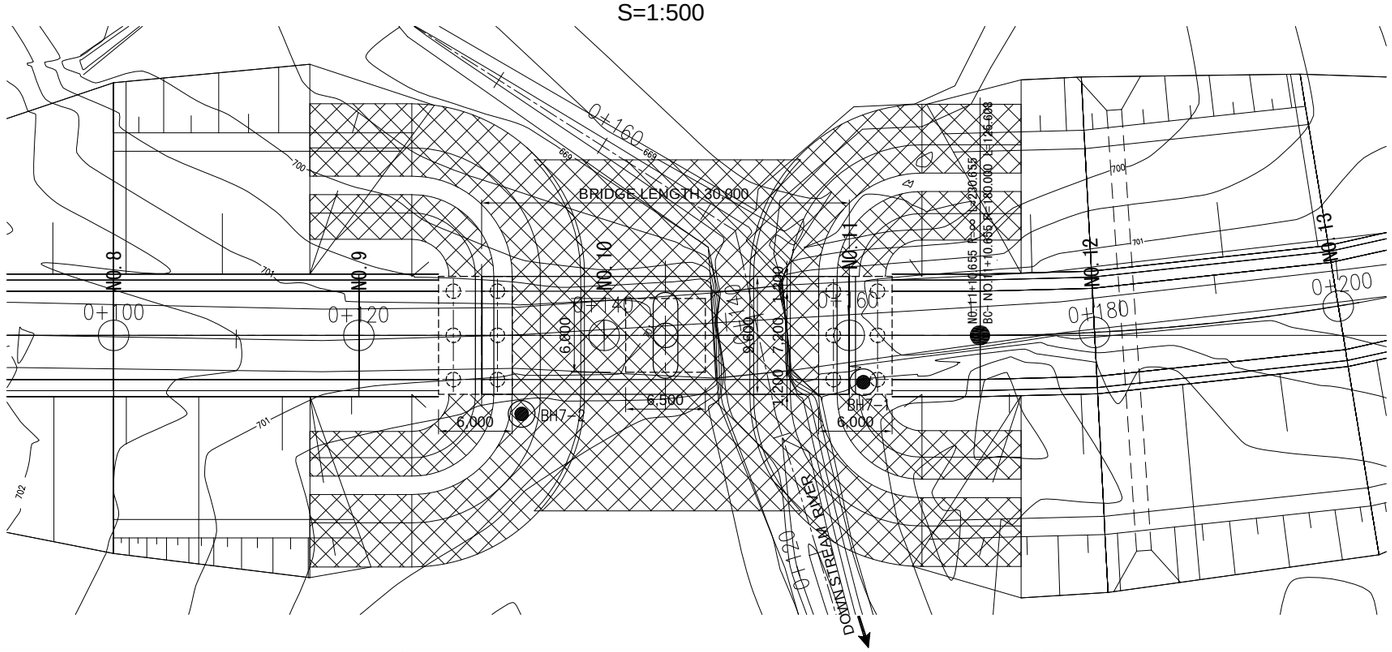
GENERAL VIEW OF NIVAGO

ELEVATION
S=1:500

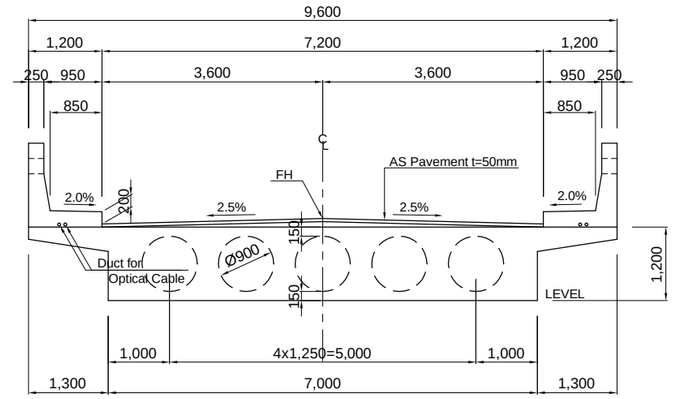


GRANDIENT	707.441 No.4+0.0	VCL=50m K=21				i=-0.300% L=250.000m					VCL=50m K=24	706.692 No.16+10.0
PROPOSED HEIGHT	707.201	707.141	707.112	707.081	707.067	707.022	706.990	706.961	706.901			
GRAND LEVEL	701.670	701.038	701.023	701.006	700.871	700.823	701.004	701.004	701.065			
DISTANCE	20.000	20.000	10.000	10.000	5.000	15.000	10.655	9.345	20.000			
CHAINAGE	No.8	No.9	A1 No.9+10.0	No.10	P1 No.10+5.0	A2 No.11	No.11+10.655	NO.12	NO.13			

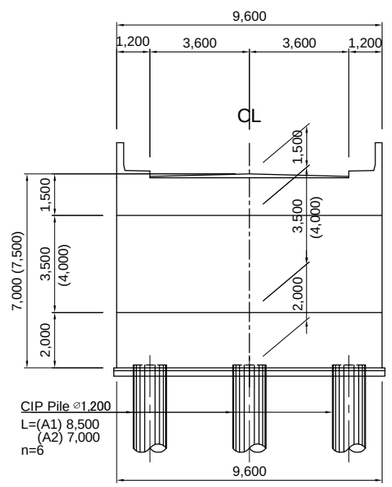
PLAN
S=1:500



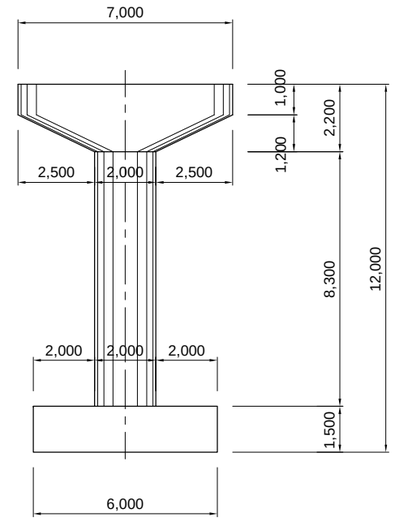
GIRDER SECTION
S=1:100



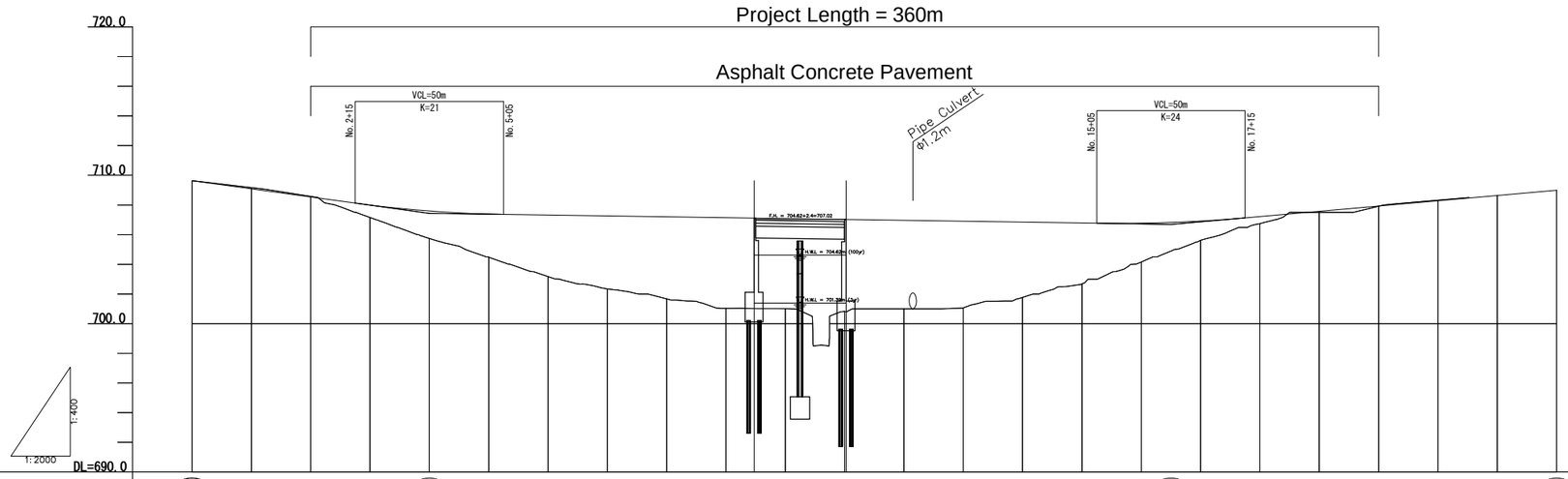
A1(A2) ABUTMENT
S=1:200



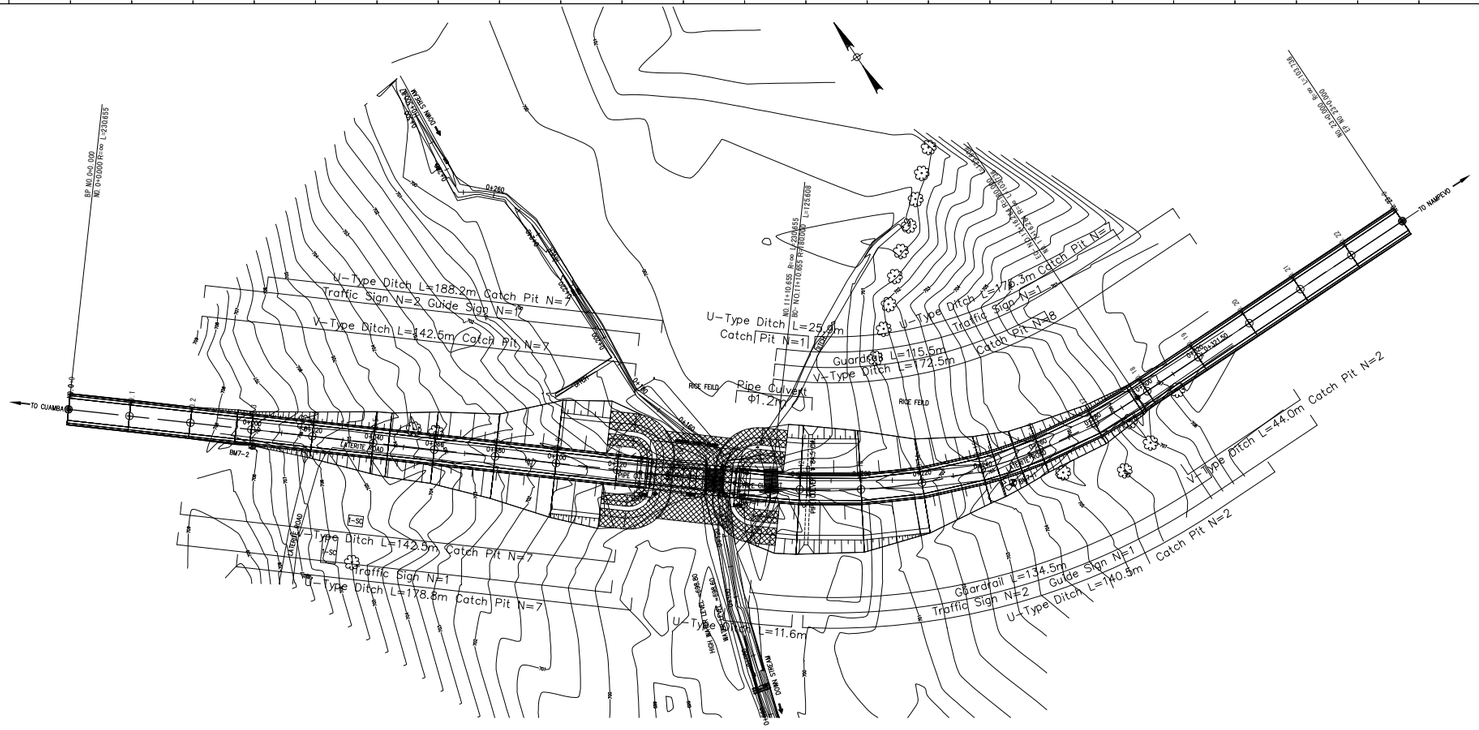
P1 PIER
S=1:200



NATIONAL ROADS ADMINISTRATION(ANE)	THE PROJECT FOR CONSTRUCTION OF BRIDGES OF THE ROAD BETWEEN ILE AND CUAMBA	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	TITLE	SCALE	DATE	DRAWING NO.
			GENERAL VIEW OF NIVAGO	AS SHOWN		



Gradient	709.630	i=-2.736% L=80.000m	707.441	i=-0.300% L=250.000m	706.692	i=1.763% L=130.000m	708.983																
Proposed Height	709.630	709.083	708.536	707.995	707.594	707.388	707.321	707.261	707.201	707.141	707.081	707.021	706.961	706.901	706.842	706.782	706.768	706.914	707.220	707.573	707.926	708.278	708.631	708.983
Ground Height	709.630	709.167	708.576	707.161	705.744	704.483	703.174	702.345	701.670	701.038	701.006	700.823	701.004	701.065	701.773	702.681	704.156	705.621	706.744	707.498	707.919	708.319	708.655	708.983
Cut	0.000	0.083	0.040																			0.040	0.025	0.000
Embankment	0.000			0.833	1.850	2.905	4.148	4.916	5.532	6.104	6.075	6.198	5.957	5.836	5.069	4.100	2.612	1.293	0.476	0.075	0.006			0.000
Chainage	NO.0	NO.1	NO.2	NO.3	NO.4	NO.5	NO.6	NO.7	NO.8	NO.9	NO.10	NO.11	NO.12	NO.13	NO.14	NO.15	NO.16	NO.17	NO.18	NO.19	NO.20	NO.21	NO.22	NO.23



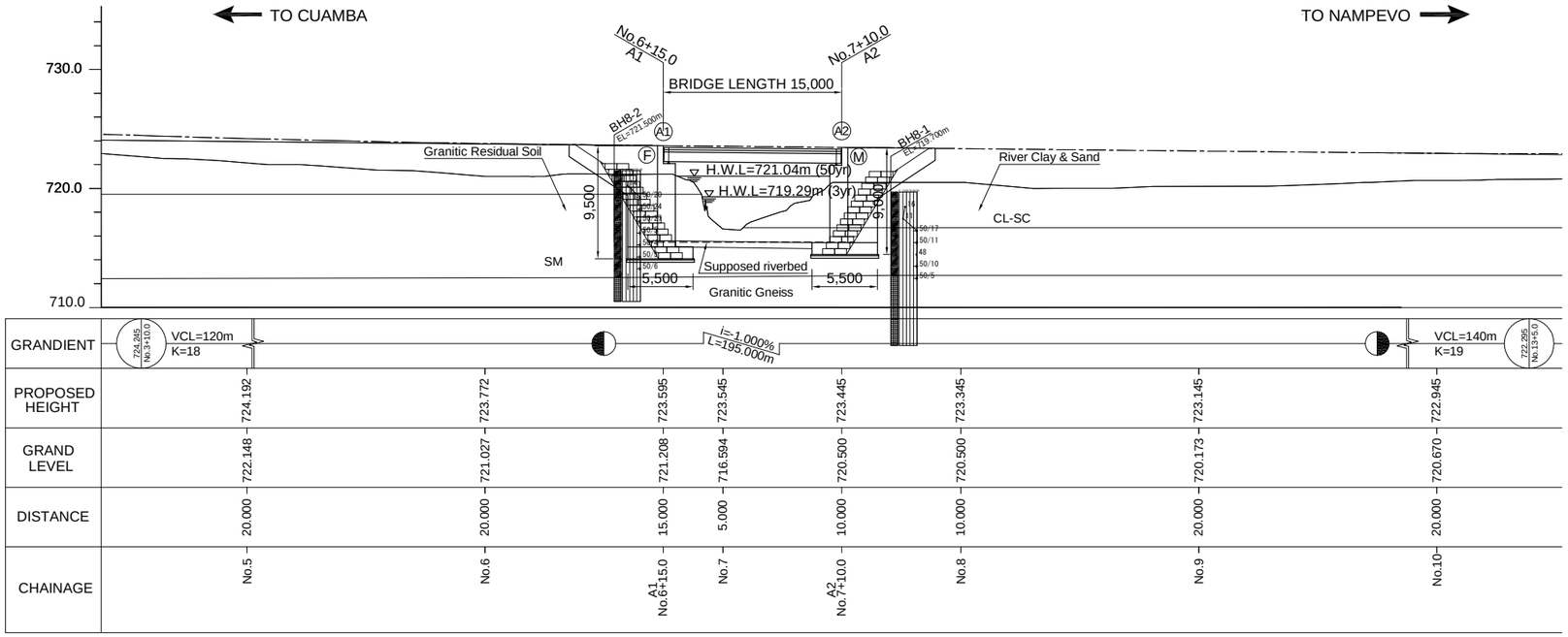
Note:
Topographic data before No.3 and after No.19 is assumed because of luck of topographic survey.
Actual topographic data of these assumed sections will be obtained at detail design stage.

NATIONAL ROADS ADMINISTRATION(ANE)	THE PROJECT FOR CONSTRUCTION OF BRIDGES OF THE ROAD BETWEEN ILE AND CUAMBA	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	TITLE	SCALE	DATE	DRAWING NO.
			Plan and Profile for Br.No.7 (Nivaco)			

GENERAL VIEW OF MATSITSE

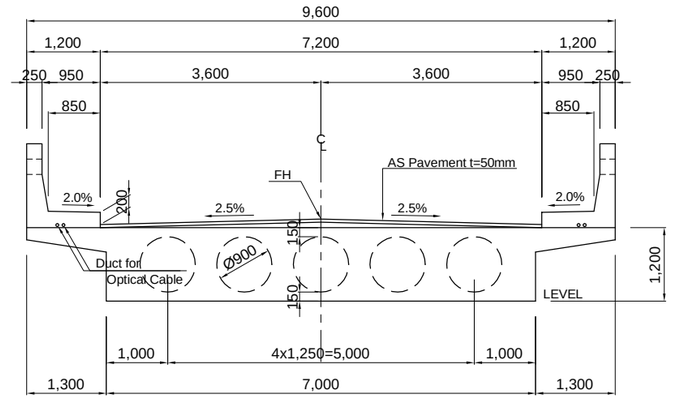
ELEVATION

S=1:500



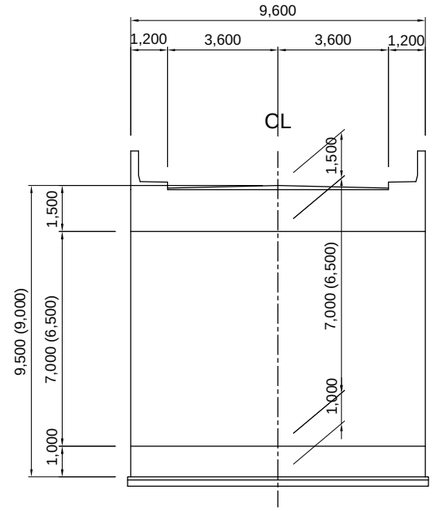
GIRDER SECTION

S=1:100



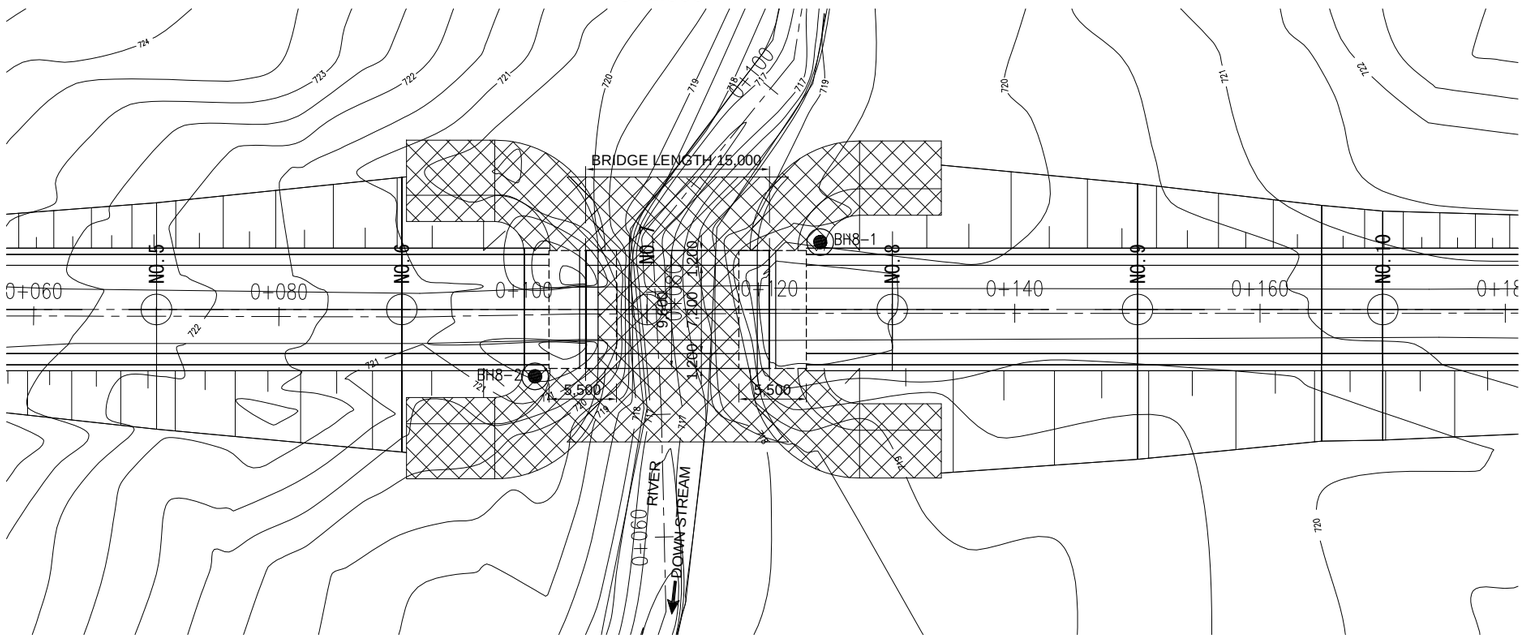
A1(A2) ABUTMENT

S=1:200

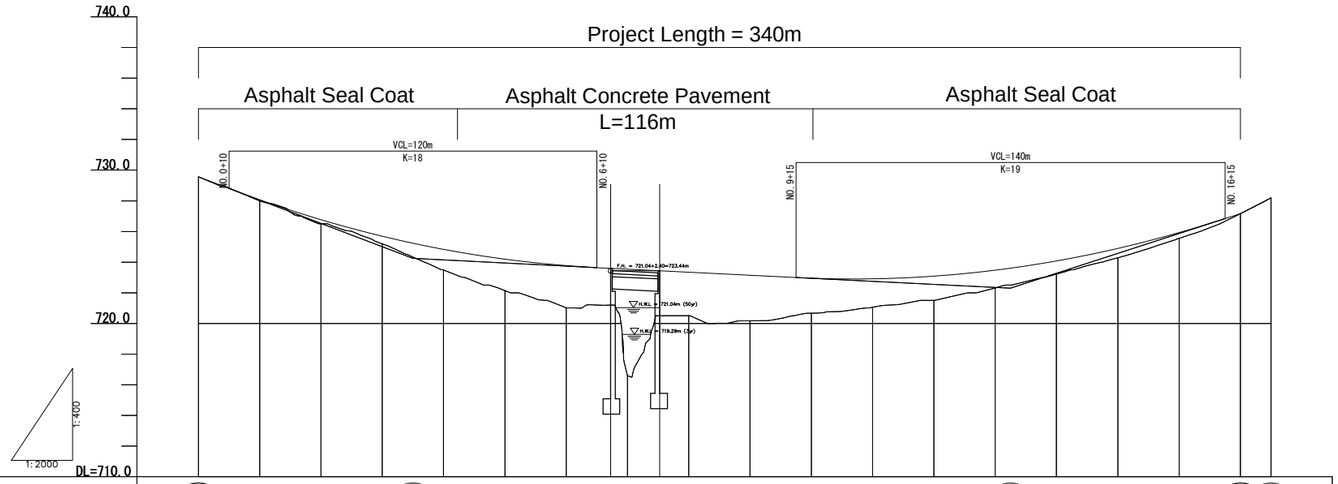


PLAN

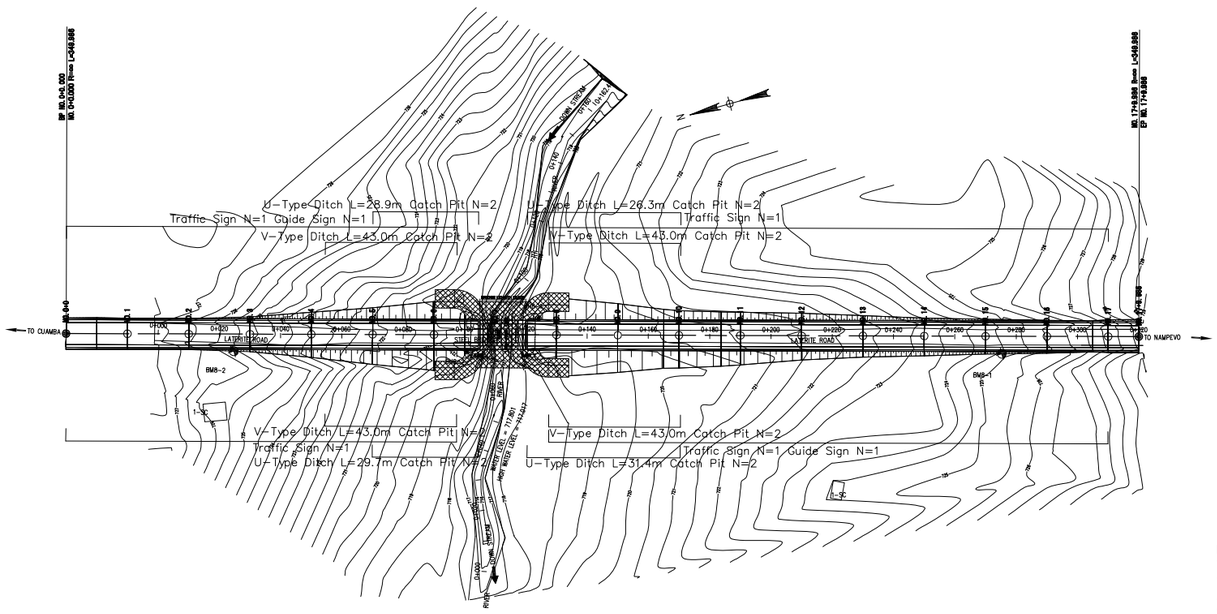
S=1:500



NATIONAL ROADS ADMINISTRATION(ANE)	THE PROJECT FOR CONSTRUCTION OF BRIDGES OF THE ROAD BETWEEN ILE AND CUAMBA	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	TITLE	SCALE	DATE	DRAWING NO.
			GENERAL VIEW OF MATSITSE	AS SHOWN		



Gradient	729.560	i=-7.593% L=70.000m	724.245	i=-1.000% L=195.000m	722.295	i=6.499% L=75.000m	727.169	i=9.296% L=20.000m	728.196									
Proposed Height	729.560	728.069	726.770	725.691	724.832	724.192	723.772	723.545	723.345	723.145	722.952	722.912	723.087	723.477	724.080	724.898	725.930	727.169	728.196
Ground Height	729.560	728.001	726.506	725.198	723.493	722.148	721.027	716.594	720.500	720.173	720.670	721.052	721.502	722.321	723.228	724.285	725.553	727.169	728.196
Cut	0.000																	0.000	0.000
Embankment	0.000	0.068	0.265	0.493	1.339	2.044	2.746	6.951	2.845	2.972	2.282	1.860	1.585	1.155	0.852	0.613	0.376	0.000	0.000
Chainage	NO.0+0.000	NO.1	NO.2	NO.3	NO.4	NO.5	NO.6	NO.7	NO.8	NO.9	NO.10	NO.11	NO.12	NO.13	NO.14	NO.15	NO.16	NO.17	NO.17+0.986

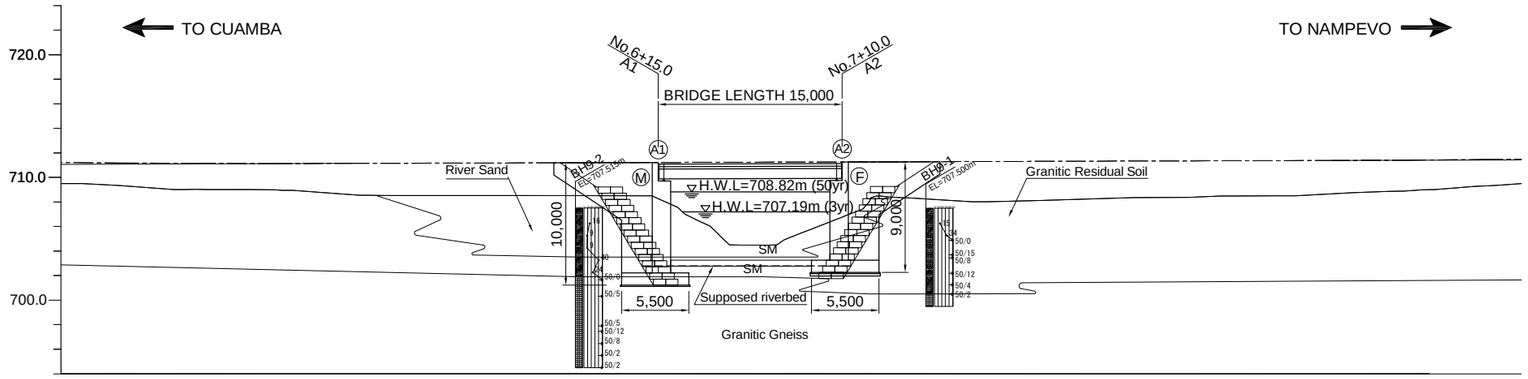


Note:
Topographic data before No.2 is assumed because of luck of topographic survey.
Actual topographic data of these assumed sections will be obtained at detail design stage.

NATIONAL ROADS ADMINISTRATION(ANE)	THE PROJECT FOR CONSTRUCTION OF BRIDGES OF THE ROAD BETWEEN ILE AND CUAMBA	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	TITLE	SCALE	DATE	DRAWING NO.
			Plan and Profile for Br.No.8 (Matsitse)			

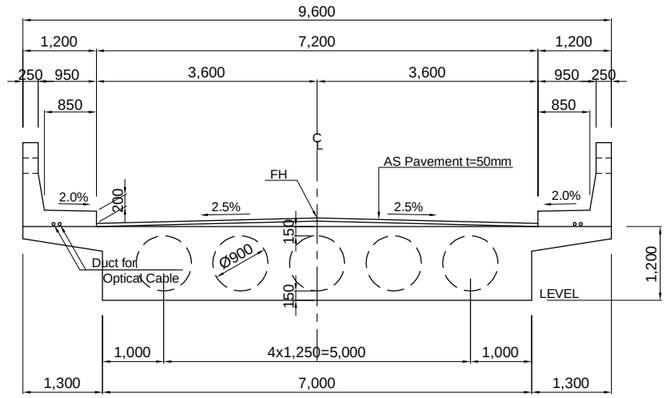
GENERAL VIEW OF NAMISAGUA

ELEVATION
S=1:500

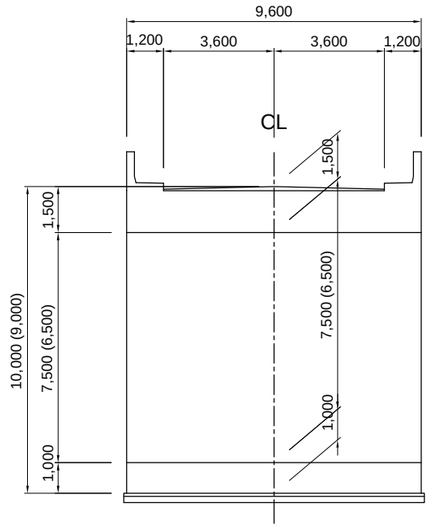


GRANDIENT	710.996 No.3+0.0	VCL=100m K=19					i=0.300% L=180.000m				VCL=100m K=20	711.587 No.12+0.0
PROPOSED HEIGHT		711.143		711.176		711.222	711.236	711.267	711.296		711.356	711.441
GRAND LEVEL		709.017		708.534		708.272	705.278	706.777	708.060		708.457	709.142
DISTANCE		20.000		20.000		15.000	5.000	10.000	10.000		20.000	20.000
CHAINAGE		No.5		No.6		A1 No.6+15.0	No.7	A2 No.7+10.0	No.8		No.9	NO.10

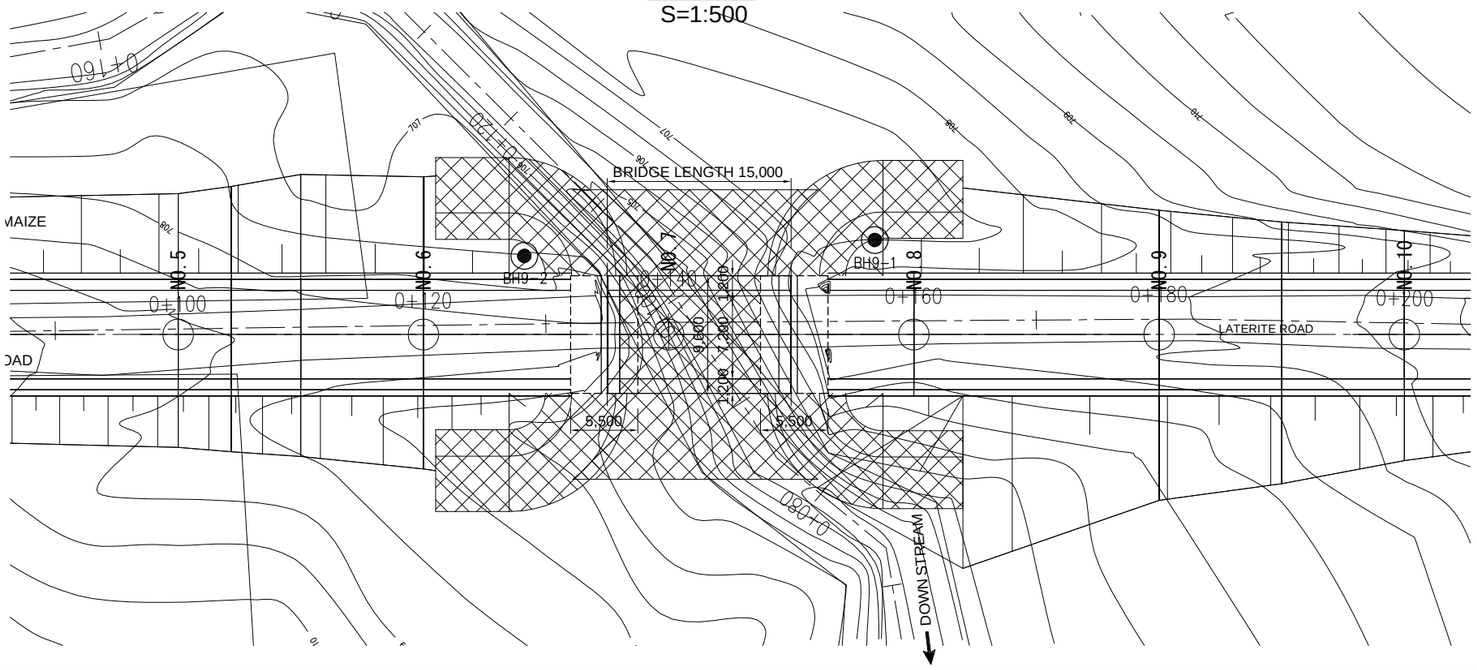
GIRDER SECTION
S=1:100



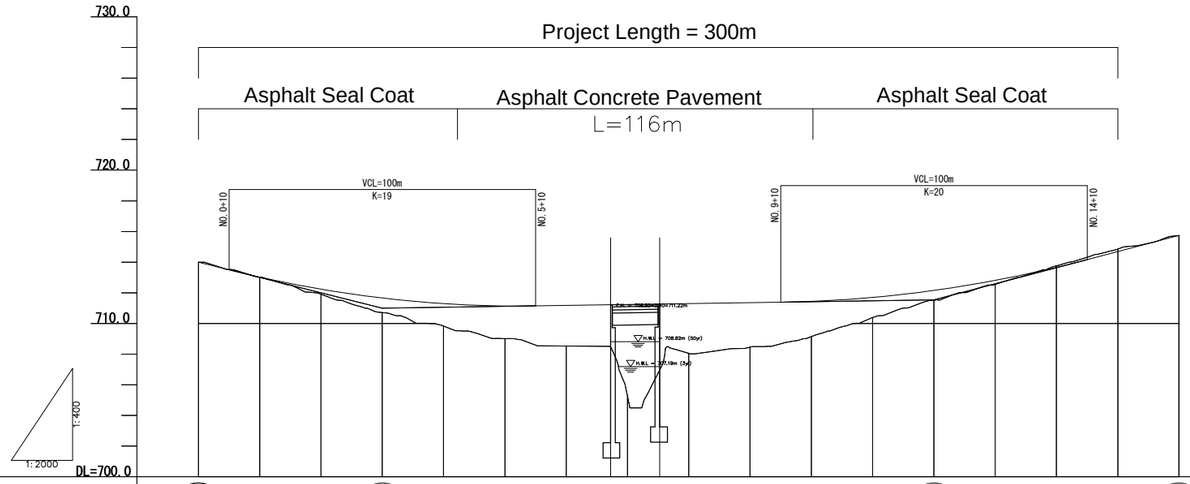
A1(A2) ABUTMENT
S=1:200



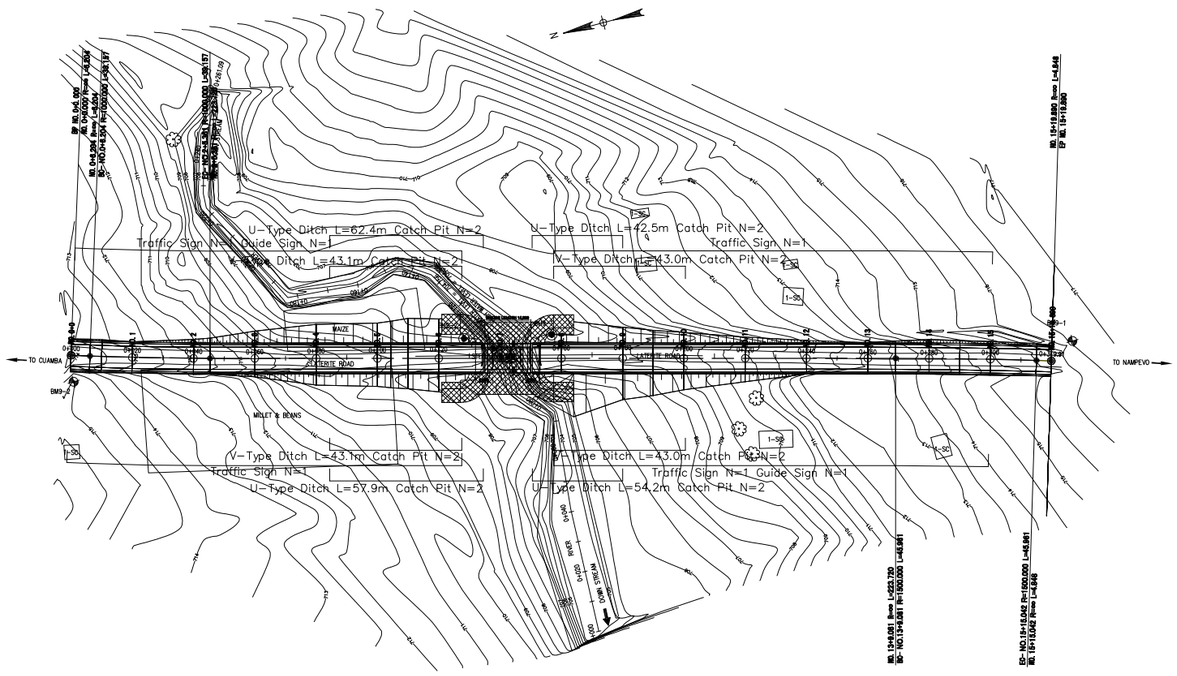
PLAN
S=1:500



NATIONAL ROADS ADMINISTRATION(ANE)	THE PROJECT FOR CONSTRUCTION OF BRIDGES OF THE ROAD BETWEEN ILE AND CUAMBA	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	TITLE	SCALE	DATE	DRAWING NO.
			GENERAL VIEW OF NAMISAGUA	AS SHOWN		



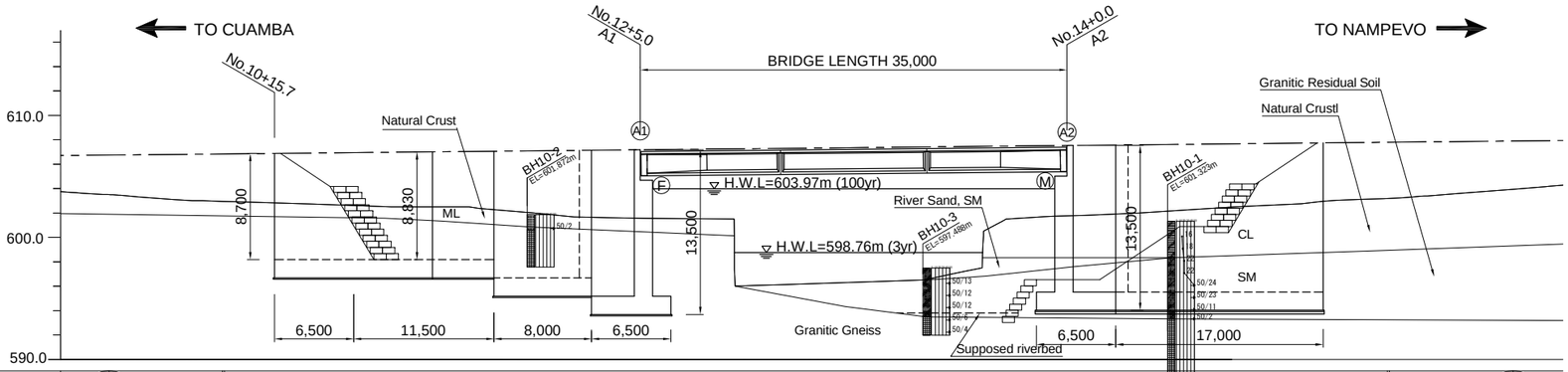
Gradient	714.000	i=-5.006% L=60.000m	710.996	i=0.200% L=180.000m	711.537	i=5.264% L=79.846m	715.740									
Proposed Height	714.000	713.025	712.236	711.660	711.295	711.143	711.176	711.236	711.296	711.356	711.441	711.700	712.157	712.813	713.667	714.695
Ground Height	714.000	713.014	711.907	710.710	709.827	709.017	708.534	705.278	708.060	708.457	709.142	710.384	711.519	712.559	713.762	714.857	715.740
Cut	0.000														0.095	0.162
Embankment	0.000	0.011	0.330	0.950	1.468	2.126	2.643	5.959	3.236	2.900	2.299	1.316	0.638	0.254		
Chainage	NO.0+0.000	NO.1	NO.2	NO.3	NO.4	NO.5	NO.6	NO.7	NO.8	NO.9	NO.10	NO.11	NO.12	NO.13	NO.14	NO.15	NO.15+19.890



NATIONAL ROADS ADMINISTRATION(ANE)	THE PROJECT FOR CONSTRUCTION OF BRIDGES OF THE ROAD BETWEEN ILE AND CUAMBA	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	TITLE	SCALE	DATE	DRAWING NO.
			Plan and Profile for Br.No.9 (Namisagua)			

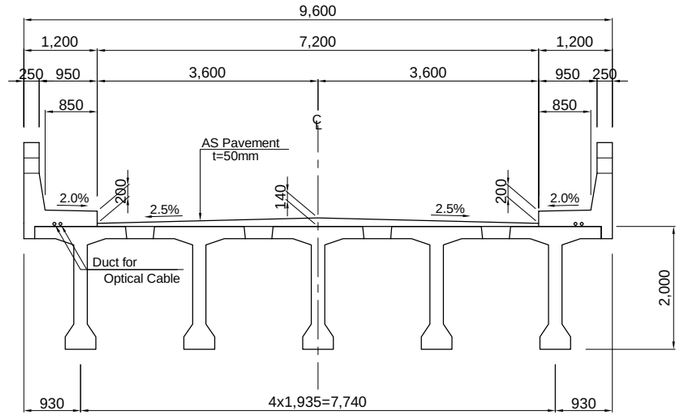
GENERAL VIEW OF NUHUSSE

ELEVATION
S=1:500

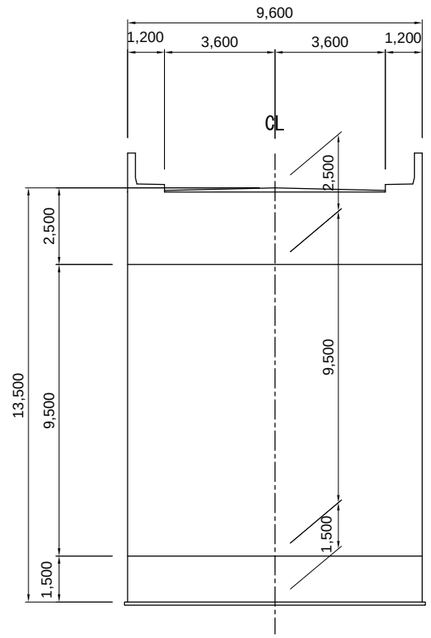


GRANDIENT	606.125 No.7+0.0	VCL=50m K=61						i=1.000% L=290.000m						VCL=50m K=34	609.025 No.21+10.0	
PROPOSED HEIGHT	606.725		606.925		607.012		607.125		607.175		607.325		607.525		607.725	607.925
GRAND LEVEL	603.573		602.662		602.501		601.666		601.569		596.234		601.762		602.838	604.221
DISTANCE	20.000		20.000		8.666		11.334		5.000		15.000		20.000		20.000	20.000
CHAINAGE	NO.10		NO.11		No.11+8.666		No.12		A1 No.12+5.0		No.13		A2 No.14		No.15	No.16

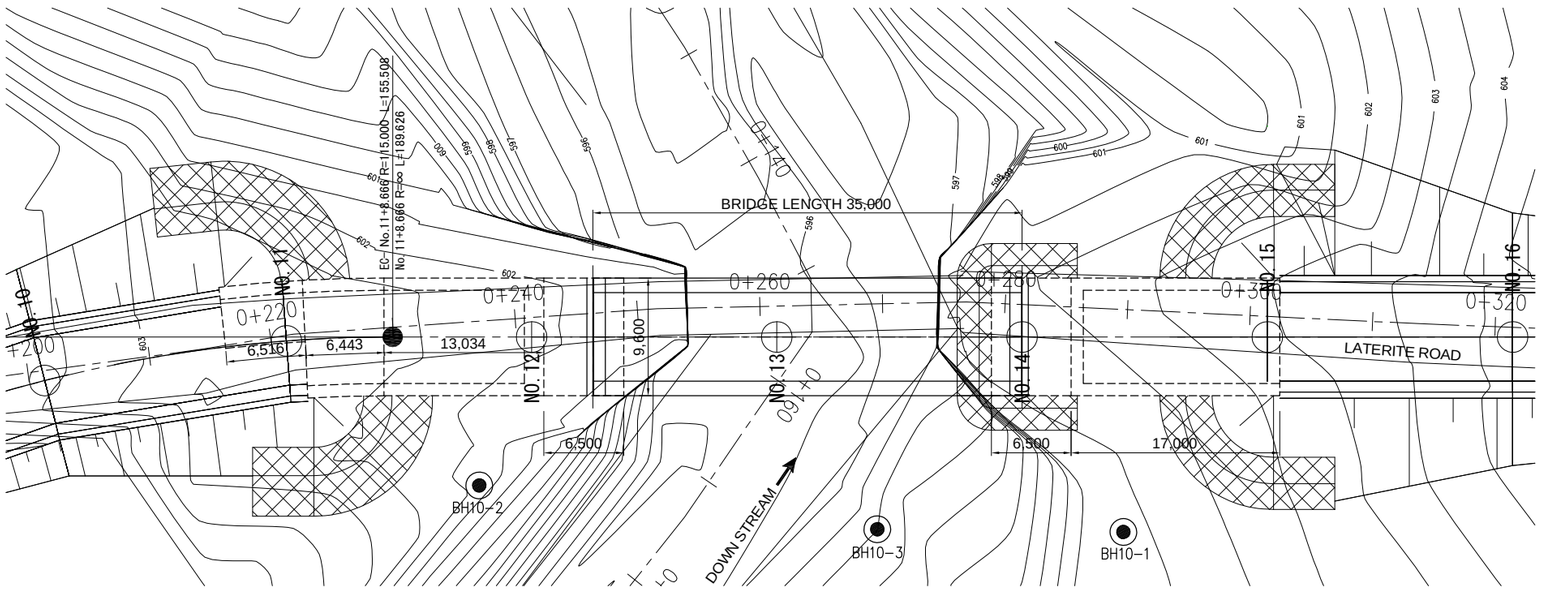
GIRDER SECTION
S=1:100



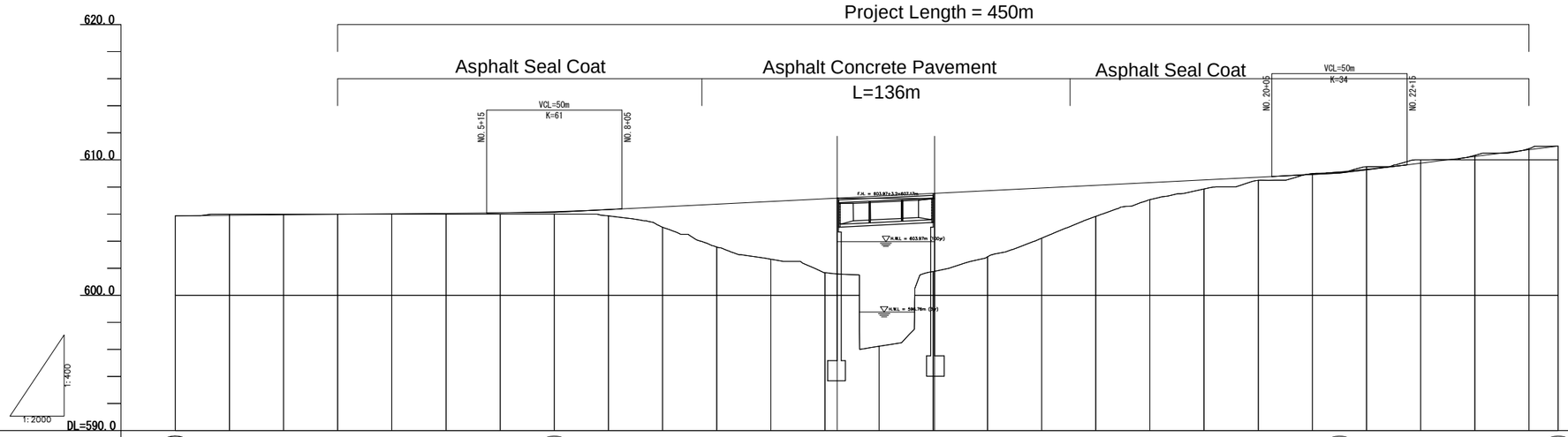
A1,A2 ABUTMENT
S=1:200



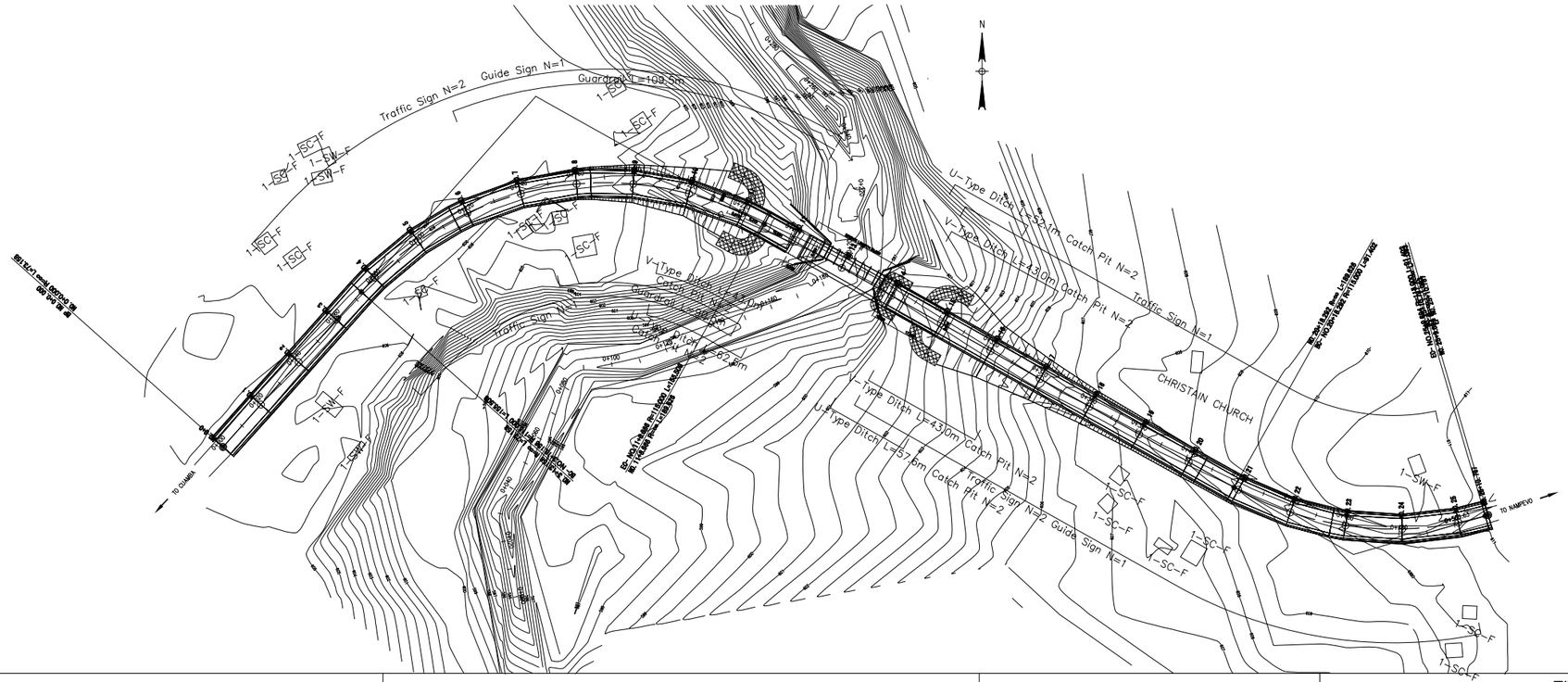
PLAN
S=1:500



NATIONAL ROADS ADMINISTRATION(ANE)	THE PROJECT FOR CONSTRUCTION OF BRIDGES OF THE ROAD BETWEEN ILE AND CUAMBA	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	TITLE	SCALE	DATE	DRAWING NO.
			GENERAL VIEW OF NUHUSSE	AS SHOWN		



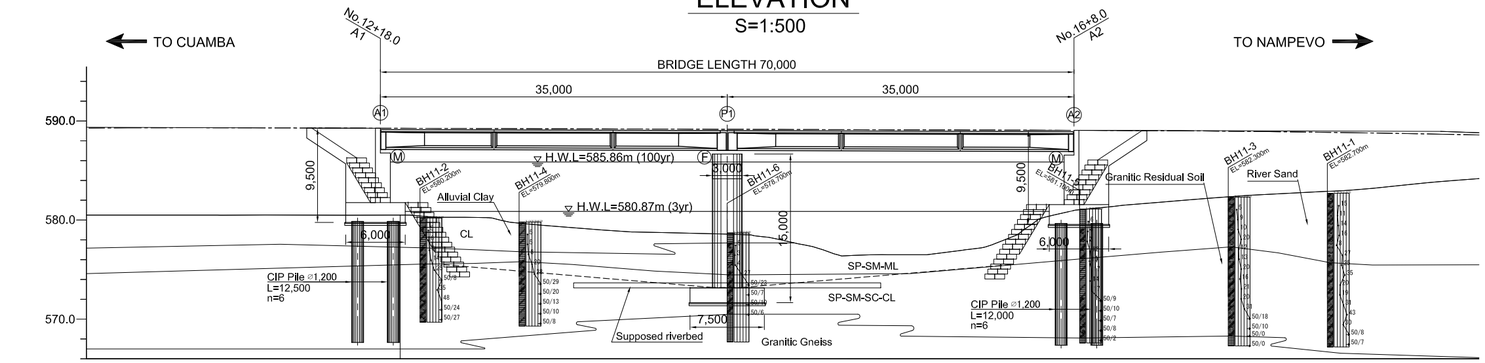
Gradient	605.880	i=0.175% L=140.000m	606.125	i=1.000% L=290.000m	609.025	i=2.466% L=80.787m	611.017																				
Proposed Height	605.880	605.915	605.950	605.985	606.020	606.055	606.092	606.177	606.327	606.525	606.725	606.925	607.125	607.325	607.525	607.725	607.925	608.125	608.325	608.525	608.725	608.958	609.305	609.765	610.258	610.751	611.017
Ground Height	605.880	605.997	605.999	605.999	605.999	606.000	606.000	606.000	605.868	605.024	603.573	602.662	601.666	596.234	601.762	602.838	604.221	605.829	607.066	607.851	608.494	608.996	609.494	610.000	610.341	610.823	611.017
Cut	0.000	0.082	0.049	0.014																		0.038	0.189	0.235	0.083	0.072	0.000
Embankment	0.000				0.021	0.055	0.092	0.177	0.459	1.501	3.152	4.263	5.459	11.091	5.763	4.887	3.704	2.296	1.259	0.674	0.231						0.000
Chainage	NO.0	NO.1	NO.2	NO.3	NO.4	NO.5	NO.6	NO.7	NO.8	NO.9	NO.10	NO.11	NO.12	NO.13	NO.14	NO.15	NO.16	NO.17	NO.18	NO.19	NO.20	NO.21	NO.22	NO.23	NO.24	NO.25	NO.25+10.787



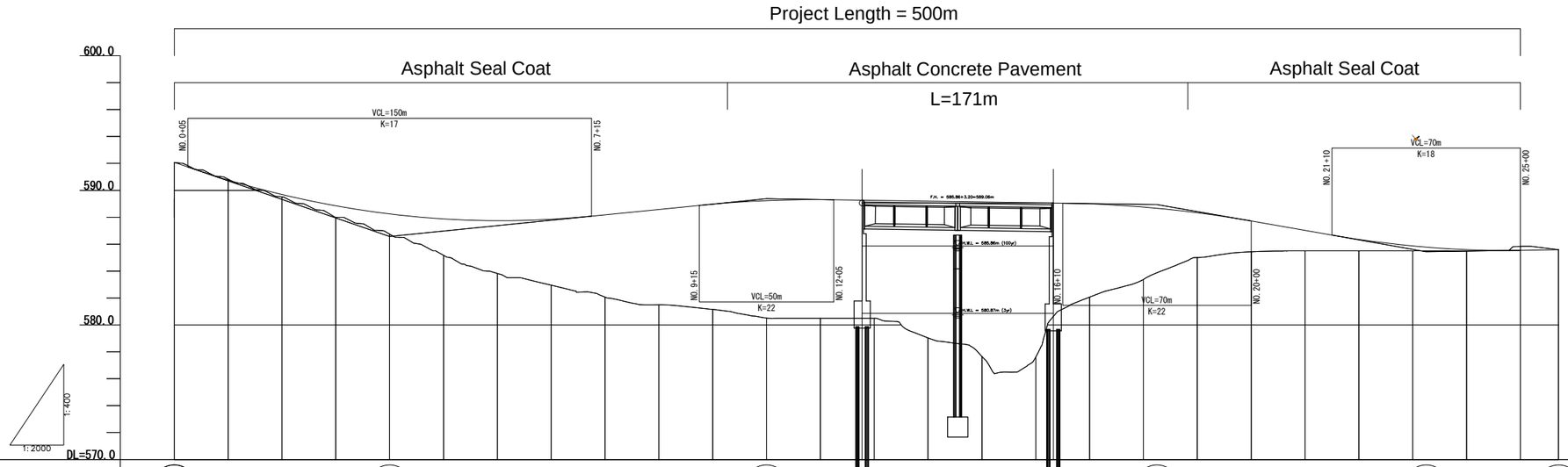
NATIONAL ROADS ADMINISTRATION(ANE)	THE PROJECT FOR CONSTRUCTION OF BRIDGES OF THE ROAD BETWEEN ILE AND CUAMBA	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	TITLE	SCALE	DATE	DRAWING NO.
			Plan and Profile for Br.No.10 (Nuhusse)			

GENERAL VIEW OF LURIO

ELEVATION
S=1:500

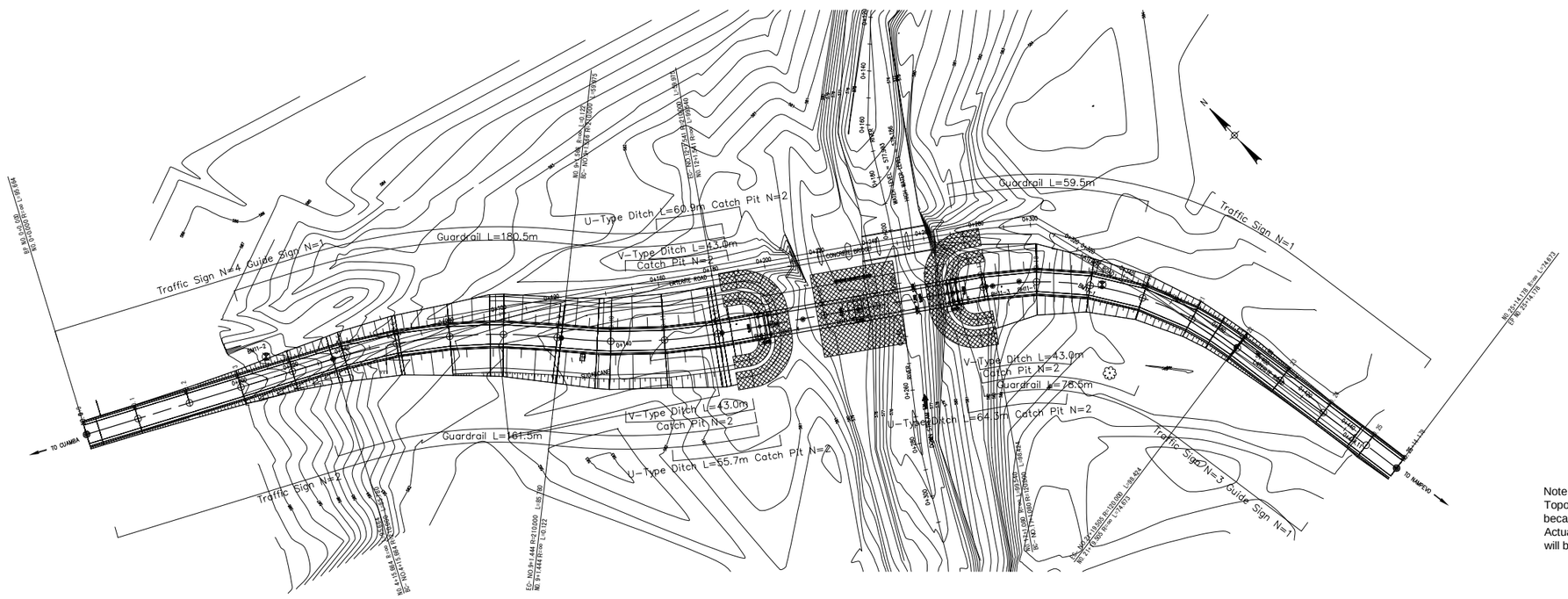


| | | |



Gradient	592.075	i=-6.870% L=80.000m	586.579	i=2.000% L=140.000m	589.379	i=-0.300% L=145.000m	588.945	i=-3.500% L=100.000m	585.445	i=0.289% L=49.178m	585.587

Chainage	Proposed Height	Ground Height	Cut	Embankment
NO.0	592.075	592.075	0.000	0.000
NO.1	590.768	590.826	0.059	
NO.2	589.689	589.516		0.173
NO.3	588.847	588.000		0.847
NO.4	588.242	586.742		1.500
NO.5	587.873	585.173		2.700
NO.6	587.741	583.826		3.915
NO.7	587.846	582.955		4.890
NO.8	588.179	582.063		6.117
NO.9	588.579	581.497		7.082
NO.10	588.973	581.152		7.821
NO.11	589.235	580.508		8.727
NO.12	589.313	580.496		8.817
NO.13	589.259	580.497		8.762
NO.14	589.199	579.029		10.170
NO.15	589.139	577.644		11.495
NO.16	589.079	577.614		11.465
NO.17	588.997	582.065		6.931
NO.18	588.754	583.381		5.373
NO.19	588.328	585.012		3.316
NO.20	587.720	585.424		2.295
NO.21	587.020	585.500		1.520
NO.22	586.347	585.500		0.847
NO.23	585.863	585.500		0.363
NO.24	585.596	585.500		0.096
NO.25	585.546	585.835	0.289	
NO.25+14.178	585.587	585.587	0.000	0.000

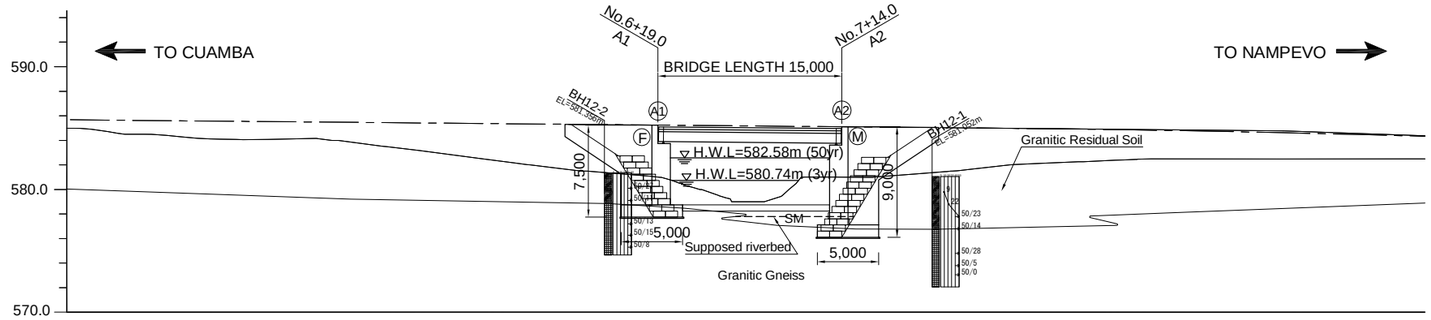


Note:
Topographic data before No.3 and after No.24 is assumed because of luck of topographic survey.
Actual topographic data of these assumed sections will be obtained at detail design stage.

NATIONAL ROADS ADMINISTRATION(ANE)	THE PROJECT FOR CONSTRUCTION OF BRIDGES OF THE ROAD BETWEEN ILE AND CUAMBA	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	TITLE	SCALE	DATE	DRAWING NO.
			Plan and Profile for Br.No.11 (Lurio)			

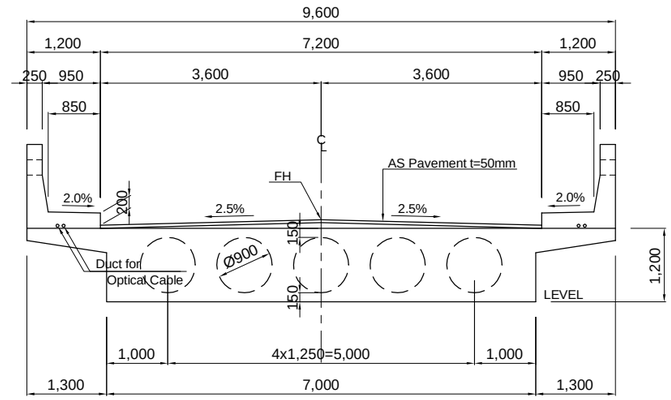
GENERAL VIEW OF MUASSI

ELEVATION
S=1:500

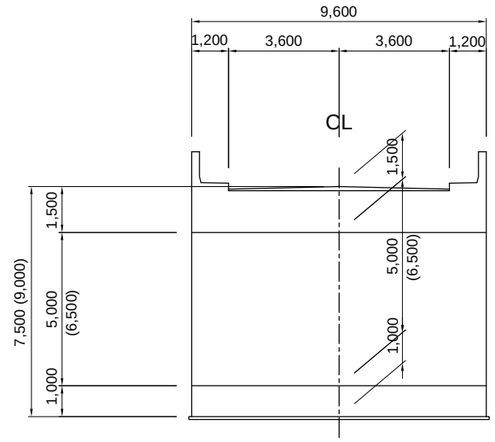


GRANDIENT	i=-0.900% L=190.000m																VCL=50m K=19	584.790 No.9+10.0
PROPOSED HEIGHT	585.600		585.535		585.420			585.249 585.240		585.114		585.060	585.021		584.821			584.381
GRAND LEVEL	584.307		584.082		583.105			581.018 580.788		581.011		581.268	581.625		582.499			582.497
DISTANCE	20.000		7.217		12.783			19.000 1.000		14.000		6.000	4.310		15.690			20.000
CHAINAGE	No.5		No.5+7.217		No.6			A1 No.6+19.0 No.7		A2 No.7+14.0		No.8	No.8+4.310		No.9			NO.10

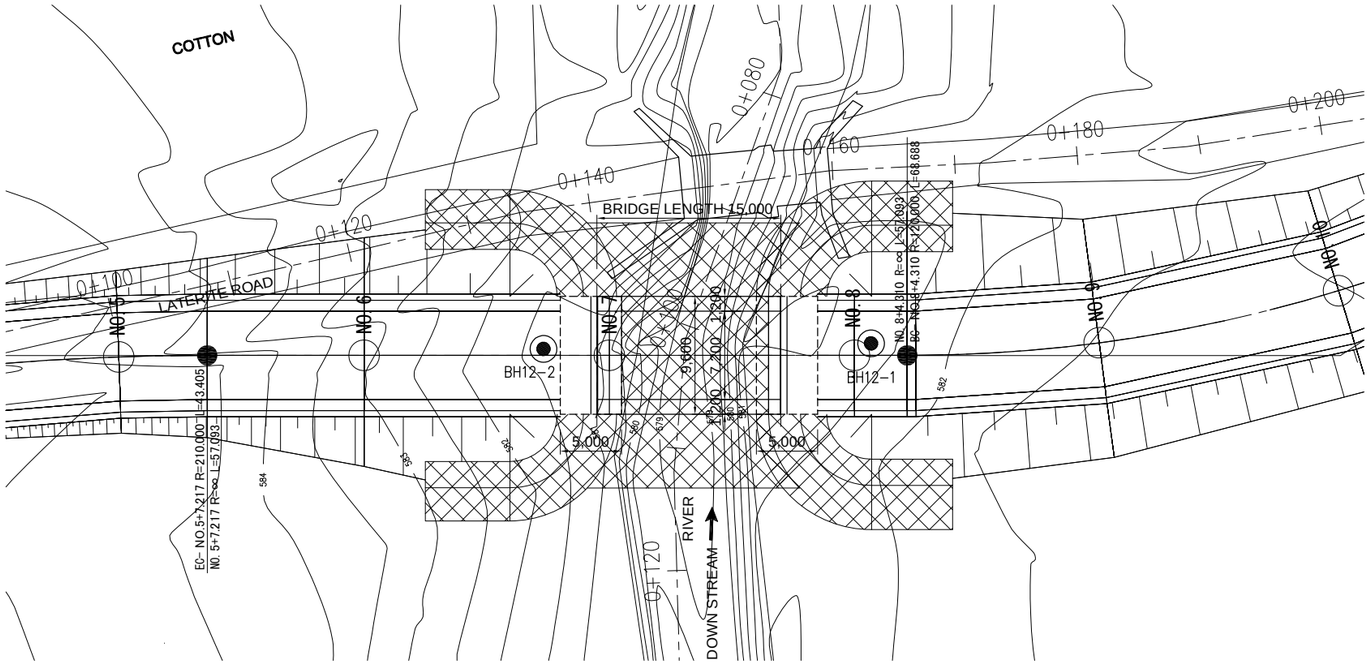
GIRDER SECTION
S=1:100



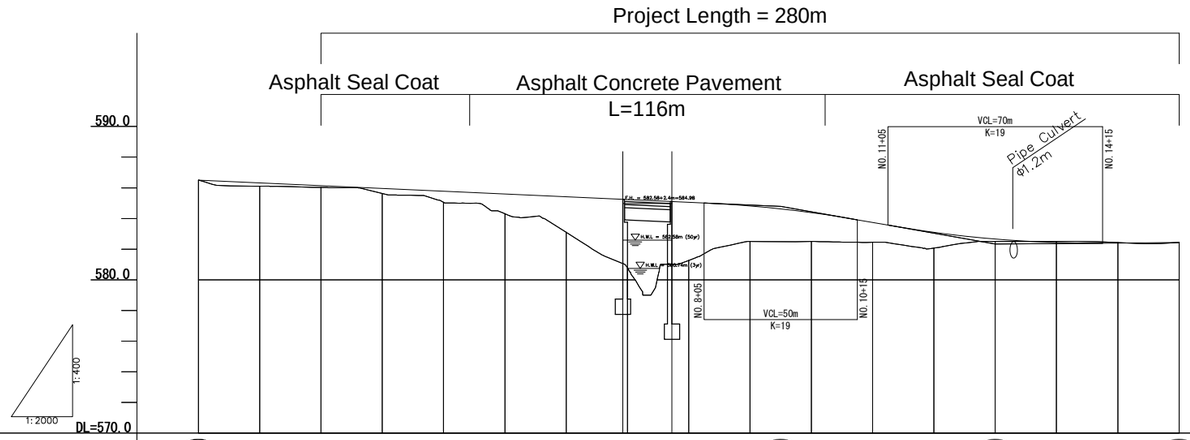
A1(A2) ABUTMENT
S=1:200



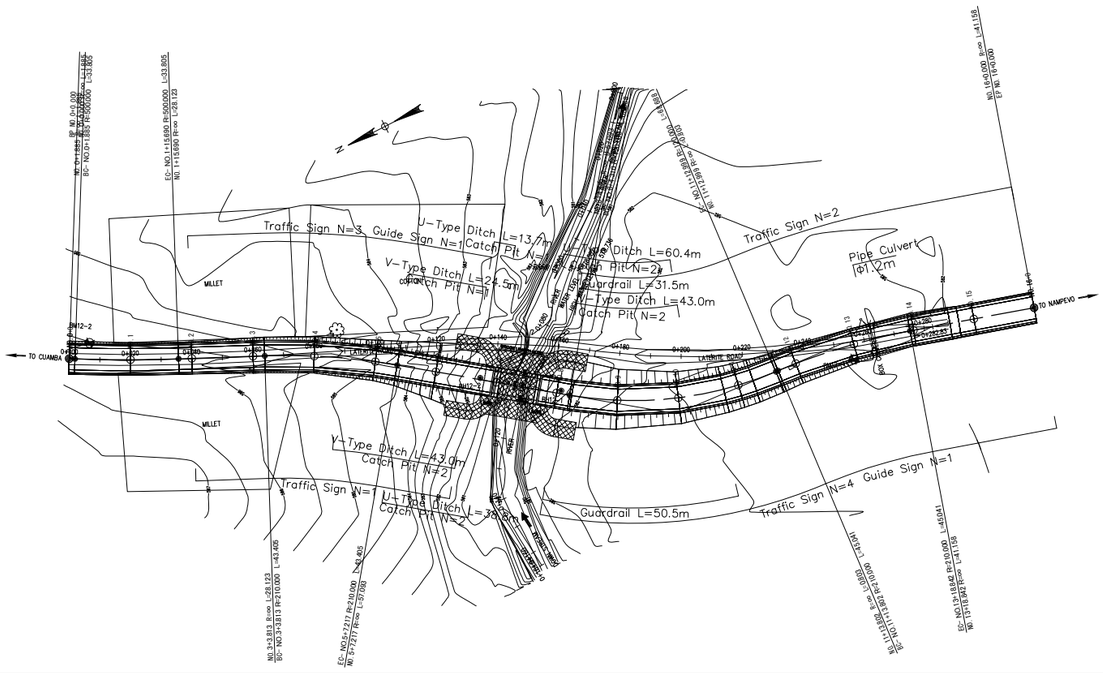
PLAN
S=1:500



NATIONAL ROADS ADMINISTRATION(ANE)	THE PROJECT FOR CONSTRUCTION OF BRIDGES OF THE ROAD BETWEEN ILE AND CUAMBA	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	TITLE	SCALE	DATE	DRAWING NO.
			GENERAL VIEW OF MUASSI	AS SHOWN		



Gradient	586.500	i=-0.900% L=190.000m							584.790	i=-3.500% L=70.000m		582.340	i=0.153% L=60.000m			582.432
Proposed Height	586.500	586.320	586.140	585.960	585.780	585.600	585.420	585.240	585.060	584.821	584.381	583.740	583.098	582.659	582.429	582.401	582.432
Ground Height	586.500	586.106	586.021	585.632	585.055	584.307	583.105	580.788	581.288	582.499	582.497	582.445	582.068	582.500	582.500	582.429	582.432
Cut	0.000														0.071	0.028	0.000
Embankment	0.000	0.214	0.118	0.327	0.724	1.292	2.315	4.452	3.792	2.322	1.884	1.295	1.030	0.160			0.000
Chainage	NO.0	NO.1	NO.2	NO.3	NO.4	NO.5	NO.6	NO.7	NO.8	NO.9	NO.10	NO.11	NO.12	NO.13	NO.14	NO.15	NO.16

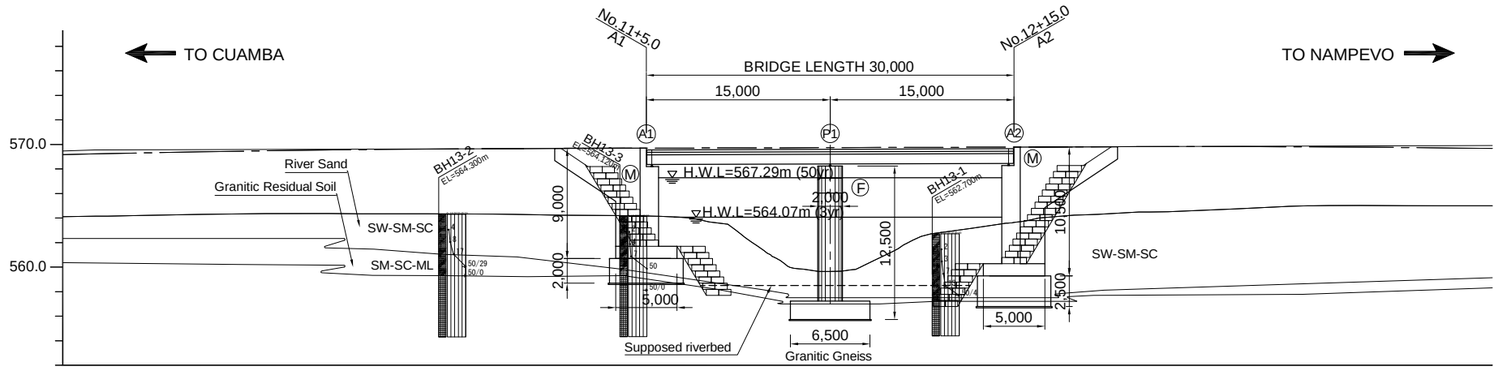


Note:
Topographic data after No.14 is assumed because of luck of topographic survey.
Actual topographic data of these assumed sections will be obtained at detail design stage.

NATIONAL ROADS ADMINISTRATION(ANE)	THE PROJECT FOR CONSTRUCTION OF BRIDGES OF THE ROAD BETWEEN ILE AND CUAMBA	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	TITLE	SCALE	DATE	DRAWING NO.
			Plan and Profile for Br.No.12 (Muassi)			

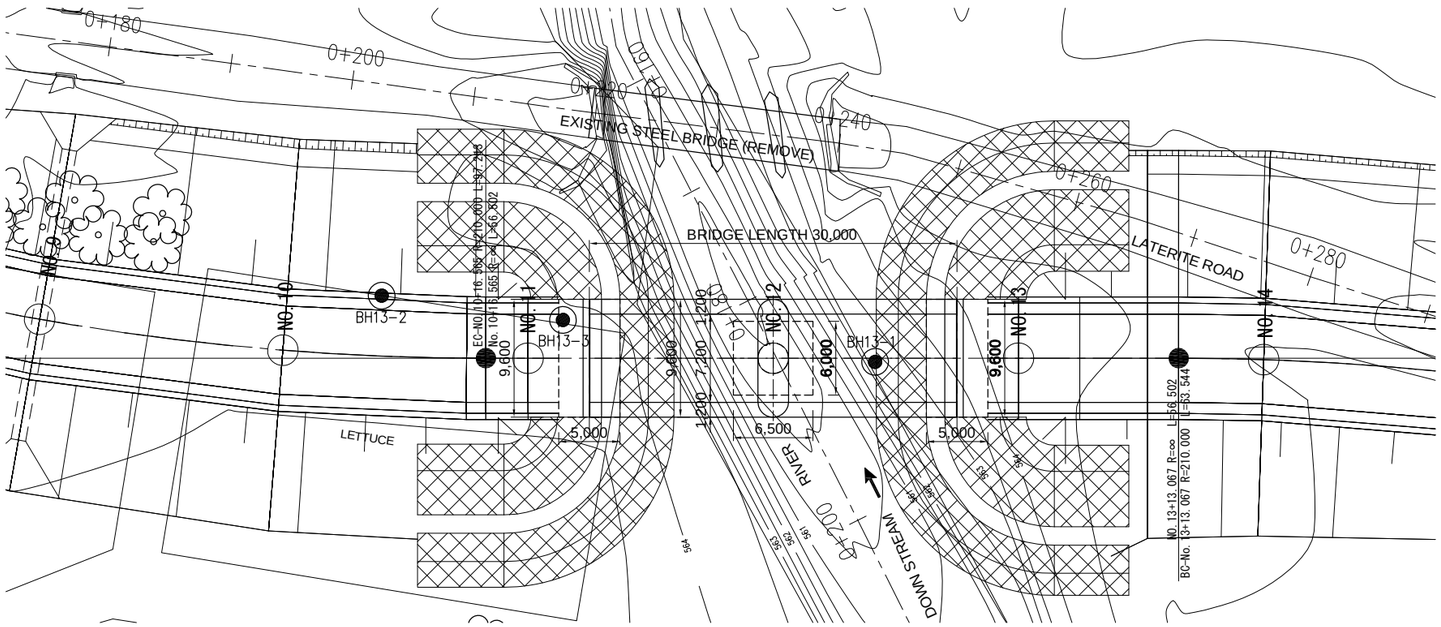
GENERAL VIEW OF NAMUTIMBUA

ELEVATION
S=1:500

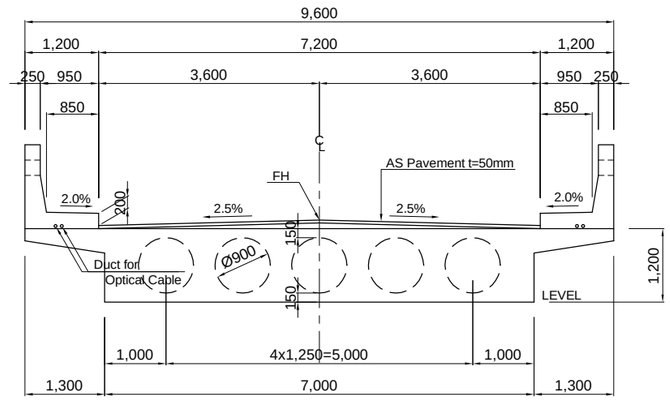


GRANDIENT	569.556 No.9+0.0	VCL=70m K=19					i=0.300% L=120.000m						VCL=70m K=18	569.917 No.15+0.0
PROPOSED HEIGHT	569.233	569.557	569.666	569.676	569.692	569.736	569.782	569.797	569.818	569.795				
GRAND LEVEL	564.145	564.355	564.245	564.215	564.156	559.635	563.632	564.231	564.751	565.005				
DISTANCE	20.000	20.000	16.565	3.435	5.000	15.000	15.000	5.000	13.067	6.933				
CHAINAGE	NO.9	No.10	No.10+16.565	No.11	A1 No.11+5.0	P1 No.12	A2 No.12+15.0	No.13	No.13+13.067	No.14				

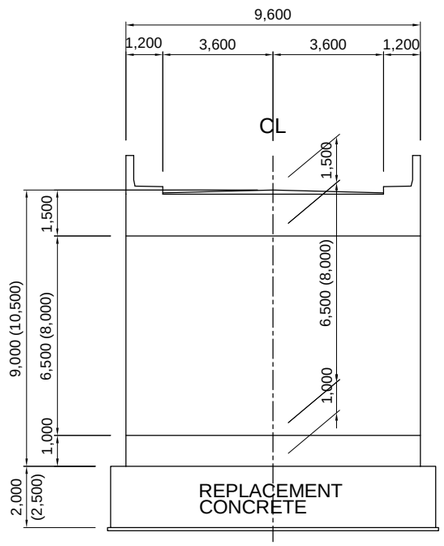
PLAN
S=1:500



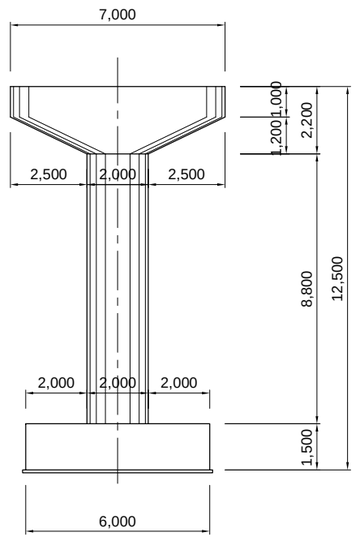
GIRDER SECTION
S=1:100



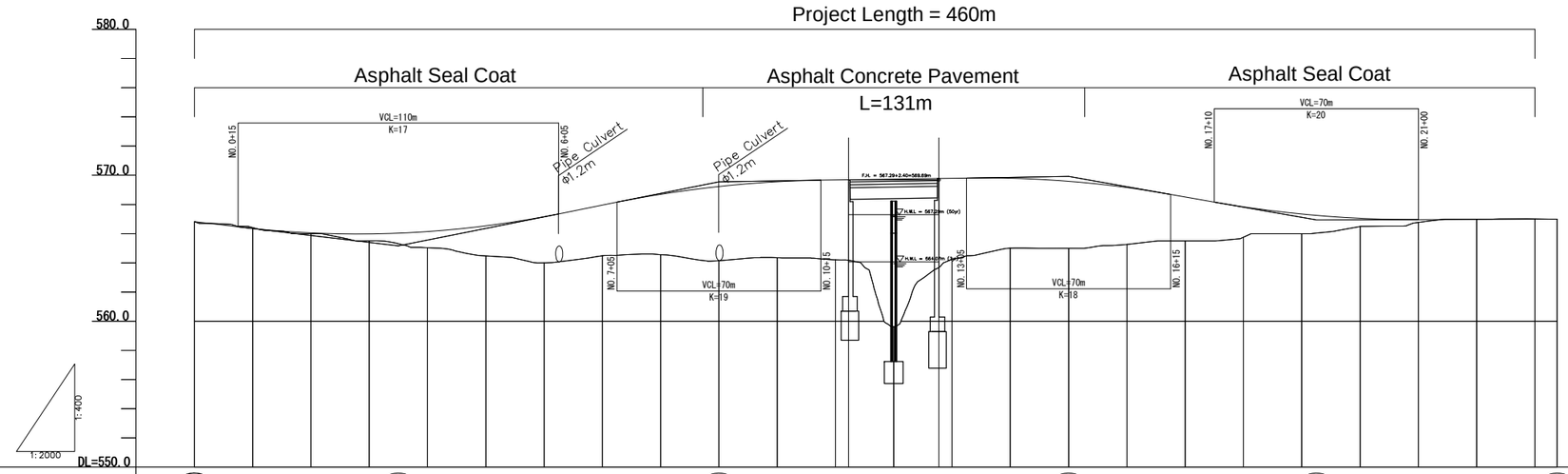
A1(A2) ABUTMENT
S=1:200



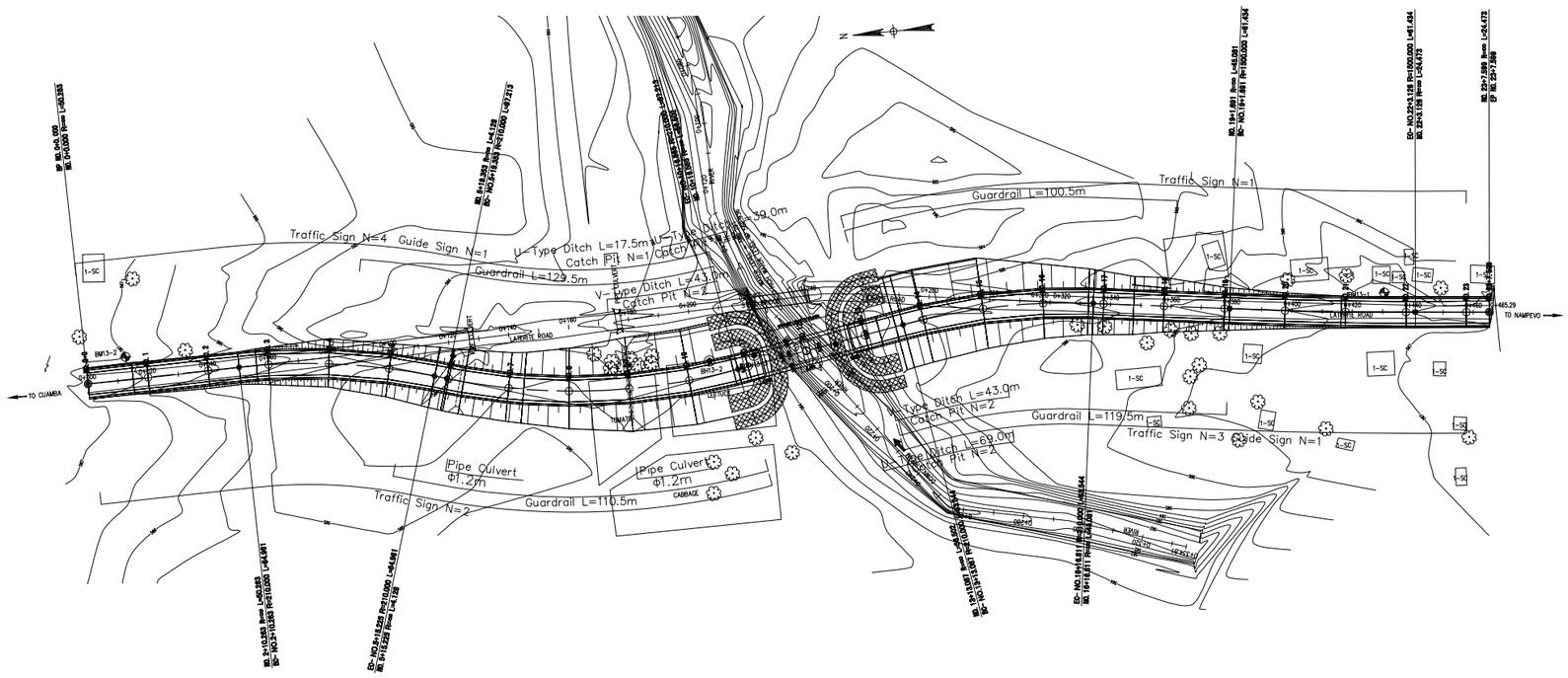
P1 PIER
S=1:200



NATIONAL ROADS ADMINISTRATION(ANE)	THE PROJECT FOR CONSTRUCTION OF BRIDGES OF THE ROAD BETWEEN ILE AND CUAMBA	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	TITLE	SCALE	DATE	DRAWING NO.
			GENERAL VIEW OF NAMUTIMBUA	AS SHOWN		



Gradient	566.824	i=-2.381% L=70.000m	565.157	i=4.000% L=110.000m	569.556	i=0.300% L=120.000m	569.917	i=-3.500% L=85.000m	566.942	i=0.072% L=82.599m	567.001													
Proposed Height	566.824	566.354	566.052	565.982	566.144	566.538	567.164	567.957	568.697	569.233	569.557	569.676	569.736	569.797	569.795	569.584	569.155	568.517	567.842	567.346	567.054	566.967	566.981	566.995	567.001
Ground Height	566.824	566.412	566.001	565.503	565.039	564.474	564.000	564.489	564.561	564.145	564.355	564.215	559.635	564.231	565.005	565.000	565.265	565.500	565.756	566.002	566.487	566.766	566.999	567.002	567.001
Cut	0.000	0.057																					0.019	0.007	0.000
Embankment	0.000		0.052	0.479	1.104	2.064	3.164	3.467	4.137	5.088	5.202	5.462	10.102	5.565	4.791	4.584	3.890	3.016	2.086	1.345	0.567	0.201			0.000
Chainage	NO.0	NO.1	NO.2	NO.3	NO.4	NO.5	NO.6	NO.7	NO.8	NO.9	NO.10	NO.11	NO.12	NO.13	NO.14	NO.15	NO.16	NO.17	NO.18	NO.19	NO.20	NO.21	NO.22	NO.23	NO.23+7.599



NATIONAL ROADS ADMINISTRATION(ANE)	THE PROJECT FOR CONSTRUCTION OF BRIDGES OF THE ROAD BETWEEN ILE AND CUAMBA	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	TITLE	SCALE	DATE	DRAWING NO.
			Plan and Profile for Br.No.13 (Namutimbua)			