

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	MOZAMBIQUE	
ZONE 37 PROJECTION U.T.M.			VERTICAL DATUM (M.S.L)		
SCALE FACTOR			HORIZONTAL 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			DIAGRAMS		
BOLT ON CONCRETE					
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	MOZAMBIQUE	
ZONE 37 PROJECTION U.T.M.			VERTICAL DATUM (M.S.L)		
SCALE FACTOR			HORIZONTAL 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			DIAGRAMS		
BOLT ON CONCRETE					
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	MOZAMBIQUE	
ZONE 37 PROJECTION U.T.M.			VERTICAL DATUM (M.S.L)		
SCALE FACTOR			HORIZONTAL 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			DIAGRAMS		
BOLT ON CONCRETE					
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	MOZAMBIQUE	
ZONE 37 PROJECTION U.T.M.			VERTICAL DATUM (M.S.L)		
SCALE FACTOR			HORIZONTAL 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			DIAGRAMS		
BOLT ON CONCRETE					
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	MOZAMBIQUE	
ZONE 37 PROJECTION U.T.M.			VERTICAL DATUM (M.S.L)		
SCALE FACTOR			HORIZONTAL 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			DIAGRAMS		
BOLT ON CONCRETE					
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	MOZAMBIQUE	
ZONE 37 PROJECTION U.T.M.			VERTICAL DATUM (M.S.L)		
SCALE FACTOR			HORIZONTAL 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			DIAGRAMS		
BOLT ON CONCRETE					
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			HORIZONTAL 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			DIAGRAMS		
BOLT ON CONCRETE					
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			HORIZONTAL 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			DIAGRAMS		
BOLT ON CONCRETE					
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	MOZAMBIQUE	
ZONE 37 PROJECTION U.T.M.			VERTICAL DATUM (M.S.L)		
SCALE FACTOR			HORIZONTAL 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			DIAGRAMS		
BOLT ON CONCRETE					
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	MOZAMBIQUE	
ZONE 37 PROJECTION U.T.M.			VERTICAL DATUM (M.S.L)		
SCALE FACTOR			HORIZONTAL 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			DIAGRAMS		
BOLT ON CONCRETE					
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	MOZAMBIQUE	
ZONE 37 PROJECTION U.T.M.			VERTICAL DATUM (M.S.L)		
SCALE FACTOR			HORIZONTAL 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			DIAGRAMS		
BOLT ON CONCRETE					
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	MOZAMBIQUE	
ZONE 37 PROJECTION U.T.M.			VERTICAL DATUM (M.S.L)		
SCALE FACTOR			HORIZONTAL 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			DIAGRAMS		
BOLT ON CONCRETE					
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	MOZAMBIQUE	
ZONE 37 PROJECTION U.T.M.			VERTICAL DATUM (M.S.L)		
SCALE FACTOR			HORIZONTAL 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			DIAGRAMS		
BOLT ON CONCRETE					
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	MOZAMBIQUE	
ZONE 37 PROJECTION U.T.M.			VERTICAL DATUM (M.S.L)		
SCALE FACTOR			HORIZONTAL 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			DIAGRAMS		
BOLT ON CONCRETE					
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	MOZAMBIQUE	
ZONE 37 PROJECTION U.T.M.			VERTICAL DATUM (M.S.L)		
SCALE FACTOR			HORIZONTAL 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			DIAGRAMS		
BOLT ON CONCRETE					
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	MOZAMBIQUE	
ZONE 37 PROJECTION U.T.M.			VERTICAL DATUM (M.S.L)		
SCALE FACTOR			HORIZONTAL DATUM WGS1984		
CO - ORDINATE			GEOGRAPHIC CO - ORDINATE		
POINT	SOUTHING	EASTING	LATITUDE	LONGITUDE	ELEVATION
BM.8-2	8308301	259794			726
DESCRIPTION OF MARK			DIAGRAMS		
BOLT ON CONCRETE					
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	MOZAMBIQUE	
ZONE 37 PROJECTION U.T.M.			VERTICAL DATUM (M.S.L)		
SCALE FACTOR			HORIZONTAL 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			DIAGRAMS		
BOLT ON CONCRETE					
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	MOZAMBIQUE	
ZONE 37 PROJECTION U.T.M.			VERTICAL DATUM (M.S.L)		
SCALE FACTOR			HORIZONTAL DATUM WGS1984		
CO - ORDINATE			GEOGRAPHIC CO - ORDINATE		
POINT	SOUTHING	EASTING	LATITUDE	LONGITUDE	ELEVATION
BM.9-2	8308915	259969			715
DESCRIPTION OF MARK			DIAGRAMS		
BOLT ON CONCRETE					
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	MOZAMBIQUE	
ZONE 37 PROJECTION U.T.M.			VERTICAL DATUM (M.S.L)		
SCALE FACTOR			HORIZONTAL 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			DIAGRAMS		
BOLT ON CONCRETE					
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	MOZAMBIQUE	
ZONE 37 PROJECTION U.T.M.			VERTICAL DATUM (M.S.L.)		
SCALE FACTOR			HORIZONTAL DATUM WGS1984		
CO - ORDINATE			GEOGRAPHIC CO - ORDINATE		
POINT	SOUTHING	EASTING	LATITUDE	LONGITUDE	ELEVATION
BM.10-2	8320009	246588			606
DESCRIPTION OF MARK			DIAGRAMS		
BOLT ON CONCRETE					
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	MOZAMBIQUE	
ZONE 37 PROJECTION U.T.M.			VERTICAL DATUM (M.S.L)		
SCALE FACTOR			HORIZONTAL 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			DIAGRAMS		
BOLT ON CONCRETE					
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	MOZAMBIQUE	
ZONE 37 PROJECTION U.T.M.			VERTICAL DATUM (M.S.L)		
SCALE FACTOR			HORIZONTAL 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			DIAGRAMS		
BOLT ON CONCRETE					
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	MOZAMBIQUE	
ZONE 37 PROJECTION U.T.M.			VERTICAL DATUM (M.S.L)		
SCALE FACTOR			HORIZONTAL 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			DIAGRAMS		
BOLT ON CONCRETE					
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	MOZAMBIQUE	
ZONE 37 PROJECTION U.T.M.			VERTICAL DATUM (M.S.L.)		
SCALE FACTOR			HORIZONTAL DATUM WGS1984		
CO - ORDINATE			GEOGRAPHIC CO - ORDINATE		
POINT	SOUTHING	EASTING	LATITUDE	LONGITUDE	ELEVATION
BM.12-2	8327817	244625			586
DESCRIPTION OF MARK			DIAGRAMS		
BOLT ON CONCRETE					
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	MOZAMBIQUE	
ZONE 37 PROJECTION U.T.M.			VERTICAL DATUM (M.S.L)		
SCALE FACTOR			HORIZONTAL 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			DIAGRAMS		
BOLT ON CONCRETE					
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	MOZAMBIQUE	
ZONE 37 PROJECTION U.T.M.			VERTICAL DATUM (M.S.L)		
SCALE FACTOR			HORIZONTAL DATUM WGS1984		
CO - ORDINATE			GEOGRAPHIC CO - ORDINATE		
POINT	SOUTHING	EASTING	LATITUDE	LONGITUDE	ELEVATION
BM.13-2	8359761.000	235133.000			567
DESCRIPTION OF MARK			DIAGRAMS		
BOLT ON CONCRETE					
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

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。



Período 1960-2008

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

	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	0.0	10.6	38.4	19.6	3.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	1.6	0.0	0.0	42.0	0.0	1.3	0.0	0.0	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	27.3	3.9	0.0	25.4	0.0	0.0	0.0	0.0	0.0	5.3	24.3	0.0	0.0	27.7	95.5	95.0	1.6	0.0	0.0	0.0	0.0	-	-
1960-03	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	1.6	1.4	4.5	32.0	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	0.0	0.0	
1960-04	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
1960-05	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	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	0.0	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	0.0	0.1	0.0	0.0	21.5	1.1	0.0	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	0.0	0.0	53.0	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	
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	0.0	
1960-09	0.0	0.0	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	0.0	18.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
1960-12	0.4	0.0	0.0	0.0	0.0	0.0	0.1	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	0.0	50.5	5.1	29.2	0.0	45.1	0.6	0.0	1.9	3.4	7.0	17.0	0.9	3.3	1.0	5.0	25.0	25.0	0.0	25.0	0.5	0.0	28.5	0.0	0.0	0.0	0.0	0.3	-
1961-02	3.6	1.5	6.0	21.0	1.6	0.0	5.7	2.7	4.0	4.1	0.0	9.8	0.0	3.6	0.6	6.1	11.6	0.0	0.0	0.0	0.3	2.5	0.0	4.7	6.3	24.4	0.0	0.0	0.0	0.0	0.0	-	-
1961-03																																	

モザンビーク国 「イレ・クアンバ間道路橋梁整備計画」準備調査（その2） 準備調査報告書
資料

1969-01	15.0	12.0	32.5	3.5	58.8	10.7	3.4	0.0	3.2	1.8	17.4	36.9	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	2.6	26.8	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	0.0	0.0	0.0	
1969-03	0.0	0.0	7.9	0.0	3.2	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	0.0	
1969-05	1.8	0.1	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	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	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	0.0	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	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
1969-10	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	0.0	0.0	5.4	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	40.0	0.0	0.0	39.9	1.8	24.5	28.9	89.5	4.9	9.8	34.4	10.6	14.6	0.3	6.2	0.1	11.4	0.0	0.0	37.0	0.0	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	16.8	63.4	0.0	16.8	43.2	0.0	2.2	46.5	4.2	
1970-02	7.4	10.4	29.2	0.3	0.3	4.5	27.0	6.6	12.8	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.4	0.0	0.0	0.0	3.0	0.0	0.0	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	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	
1970-04	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	1.0	0.2	4.0	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	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	8.8	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	
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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
1970-07	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	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	16.7	
1970-11	0.0	0.0	1.6	0.0	0.0	0.0	16.8	4.4	0.0	2.9	56.3	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	
1970-12	4.3	11.4	6.8	18.8	10.0	8.8	1.6	18.0	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	8.5	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	0.0	1.3	0.0	0.0	1.5	0.0	4.3	9.0	4.7	0.0	0.7	0.0	3.0	3.0	0.0	0.0	136.3	6.3	0.0	0.0	0.0	42.2	9.1	0.0	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	19.2	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	6.6	
1971-04	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.8	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	
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	0.0	0.0	0.0	0.0	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	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	0.0	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	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
1971-11	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.5	0.0	0.0	9.7	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	
1971-12	0.0	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	0.0	0.0	0.0	0.0	13.6	13.4	8.8	0.0	1.1	1.5
1972-01	0.6	0.5	0.0	0.9	0.0	2.8	0.0	26.7	0.0	8.4	0.0	0.0	4.5	48.1	71.8	4.9	1.3	2.4	0.0	0.0	0.0	10.3	0.0	0.0	0.0	0.0	7.4	7.0	2.7	0.0	0.0	8.8
1972-02	13.2	0.0	0.0	0.0	2.4	0.0	0.0	8.4	6.6	0.0	0.0	0.0	32.5	9.8	0.0	12.1	1.8	0.0	0.0	20.0	20.3	0.8	2.2	12.0	3.8	3.7	18.9	15.0	-	-	-	
1972-03	5.9	0.0	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	2.4	5.1	0.0	0.0	0.0	0.0	0.0	0.0	12.1	3.0	0.0	0.0	0.0	0.0	0.0	0.0	
1972-04	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	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	0.0	0.0	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	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
1972-11	0.0	0.0	0.0	0.3																												

モザンビーク国 「イレ・クアンバ間道路橋梁整備計画」準備調査（その2） 準備調査報告書
資料

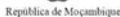
[illegible]

モザンビーク国 「イレ・クアンバ間道路橋梁整備計画」準備調査（その2） 準備調査報告書
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[illegible]

モザンビーク国 「イレ・クアンバ間道路橋梁整備計画」準備調査（その2） 準備調査報告書
資料

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	0.0	0.0	0.0	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	56.1	22.3	20.6	10.4	22.7	0.2	15.0	0.0	2.7	7.2	0.0	0.0	0.0	24.8	0.0	3.3	0.0	-	-		
2004-03	1.6	11.2	1.4	4.8	0.3	0.9	0.6	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	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	16.3		
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	0.0	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			
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	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	0.0	0.1	0.0	0.8	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	4.6	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	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	64.1	0.0	3.8	22.2	0.7	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	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	6.6	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	15.6	0.0	0.0	0.0	0.0		
2005-04	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	0.0	0.0	8.8	0.0	0.0	1.5	0.0	28.8	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	0.0	0.0	0.5	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		
2005-09	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	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	0.0	0.0	0.0	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	0.0	0.0	5.8	0.2	1.0	0.0	0.0	
2005-12	1.5	3.4	0.0	0.0	0.0	25.4	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.0	
2006-01	99.9	131.5	29.8	0.3	16.0	0.0	0.0	0.0	0.0	0.0	80.0	0.0	37.0	6.0	4.0	66.0	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	6.5	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	0.0	0.0	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	0.0	0.0	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	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
2006-08	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	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	0.0	0.0	
2006-10	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	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	18.9	0.0	60.1	22.8	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	
2006-12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2007-01	0.0	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	20.9		
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	0.0	0.0	12.7	0.0	1.3	0.0	-	
2007-03	0.3	0.0	1.3	0.0	0.9	0.0	0.0	7.7	1.0	8.4	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	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	0.3	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	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	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0	0.0	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	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	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
2007-10	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2007-11	0.0	0.0	0.																														



Caixa Postal 256 • MAPUTO

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Nº120-11/DOR-DAD

Maputo, 29 de Março de 2011

A

Elqth- Japan Engine
Consultants Inc

Macuto

Estação: Cuamba

periodo: 2008-2010

Elemento: Precip+B128ação total diária (das 9 às 9h, em mm)

Year	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	113	0	0	0	0	478	188	29	561	0	231	38	21	86	162	122	116	0	122	48	46	0	0	0	0	959	576	868	147	121	242	330	280	480	0
2008-02	00	00	00	00	00	00	00	00	55	243	83	62	0	0	0	0	0	0	0	0	0	0	0	0	574	0	0	0	0	0	134	0	0	0	
2008-03	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	
2008-04	00	00	00	00	00	00	00	00	00	00	00	00	00	03	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	
2008-05	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	
2008-06	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	
2008-07	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	
2008-08	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	
2008-09	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	
2008-10	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	
2008-11	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	
2008-12	40	111	778	0	0	0	0	0	0	17	0	24	30	07	207	1	860	27	0	668	166	176	614	0	0	444	94	67	31	0	0	0	0	0	0
2009-01	00	00	00	00	673	82	25	0	0	0	0	0	0	0	0	0	0	0	201	106	63	87	51	18	203	0	0	0	0	0	0	0	0	0	
2009-02	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	
2009-03	04	02	24	62	360	135	04	00	09	00	31	00	00	00	00	00	00	00	00	191	103	00	263	211	286	243	0	0	0	0	0	0	0	0	0
2009-04	00	236	03	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	
2009-05	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	
2009-06	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	
2009-07	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	
2009-08	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	
2009-09	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	
2009-10	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	85	
2009-11	04	04	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	17	
2009-12	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	95	
2010-01	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	
2010-02	331	344	04	00	12	00	00	00	00	00	07	00	364	00	00	240	141	866	136	114	220	208	13	00	63	168	78	418	00	00	00	00	00	00	
2010-03	00	156	301	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	14	00	
2010-04	217	00	00	00	90	122	124	165	00	00	00	00	32	78	00	00	41	68	98	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	
2010-05	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	
2010-06	12	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00					

Estação: He

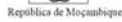
periodo: 1981-1990

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

[illegible]

Estação: Gurue período: 1981-2007

[illegible]



Instituto Nacional de Meteorologia

Caixa Postal 256 - MAPUTO

Tele.: OBSERTOR - Telef.: 490064-490148-492530 - Fax: 491150 - Telex: SMMMP 6-259

Nº216-11/DOR-DAO

Maputo, 04 de Agosto de 2011

A
Administração Nacional de Estradas
Att. Evaristo Mussupai

MAPUTO

Estação: Ilé

Periodo: 2010 - 2011

Elemento: Precipitação total diária (das 9 às 0h, em mm)

Year	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	00	00	00	00	00	00	00	00	00	00	186	00	00	00	00	00	00	00	00	00	00	00	00	00	43	00	81	00	00	00	00	
2010-07	00	00	00	00	00	00	-	00	00	00	00	88	00	00	00	00	00	00	88	00	00	00	00	00	00	00	00	00	15	00	00	00
2010-08	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
2010-09	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
2010-10	00	00	00	00	00	00	00	00	00	00	00	00	49	10	00	00	00	00	00	00	00	00	00	00	00	105	62	54	00	00	00	130
2010-11	00	00	00	00	00	183	00	00	00	00	00	228	00	156	00	00	00	00	79	00	00	00	00	00	-	00	00	00	00	00	00	00
2010-12	00	54	20	150	112	23	00	00	00	00	00	00	10	10	00	12	465	07	362	00	11	00	00	00	00	00	00	00	00	00	00	00
2011-01	00	02	00	00	00	00	93	04	00	85	00	00	00	00	00	00	03	16	98	100	00	00	00	00	00	99	08	208	00	368	00	15
2011-02	00	11	00	43	282	309	00	55	149	18	021	232	25	00	00	00	567	00	00	00	00	00	00	00	00	00	381	56	13	-	-	-
2011-03	00	-	00	00	09	84	82	00	00	00	12	00	00	00	00	00	00	00	00	00	00	00	00	00	00	28	00	00	00	73	85	03
2011-04	00	00	00	00	00	123	00	00	00	00	00	00	62	24	00	00	86	00	00	00	19	08	00	00	1078	00	42	00	00	00	00	00
2011-05	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
2011-06	00	00	00	00	00	00	00	00	00	00	00	00	00	15	00	00	00	00	00	00	00	00	00	00	00	00	44	00	00	00	00	00

Estação: Cuamba

Elemento: Precipitação total diária (em mm)

[illegible]

Estação: Gurut

Elemento: Temperatura máxima diária (em °C)

[illegible]