AGENCE JAPONAISE DE COOPERATION INTERNATIONALE

MINISTERE DE L'EQUIPEMENT ET DES TRANSPORTS
REPUBLIQUE DU NIGER

ETUDE SUR L'AMELIORATION DE L'ASSAINISSEMENT DE LA VILLE DE NIAMEY EN REPUBLIQUE DU NIGER

RAPPORT FINAL
VOLUME IV : PLANS

DECEMBRE 2001

TOKYO ENGINEERING CONSULTANTS CO., LTD.
YACHIYO ENGINEERING CO., LTD.

Dans ce rapport, les coûts du projet sont estimés sur la base des prix du mois de Mai 2001 avec un taux de change de

FCFA 100 = FRF 1.00 = JPY 16.66

ETUDE SUR

L'AMELIORATION DE L'ASSAINISSEMT

DE LA

VILLE DE NIAMEY

EN

REPUBLIQUE DU NIGER

RAPPORT FINAL

VOLUME I	RAPPORT SOMMAIRE
VOLUME II	RAPPORT PRINCIPAL
VOLUME III	ANNEXES
VOLUME IV	PLANS

LISTE DES PLANS

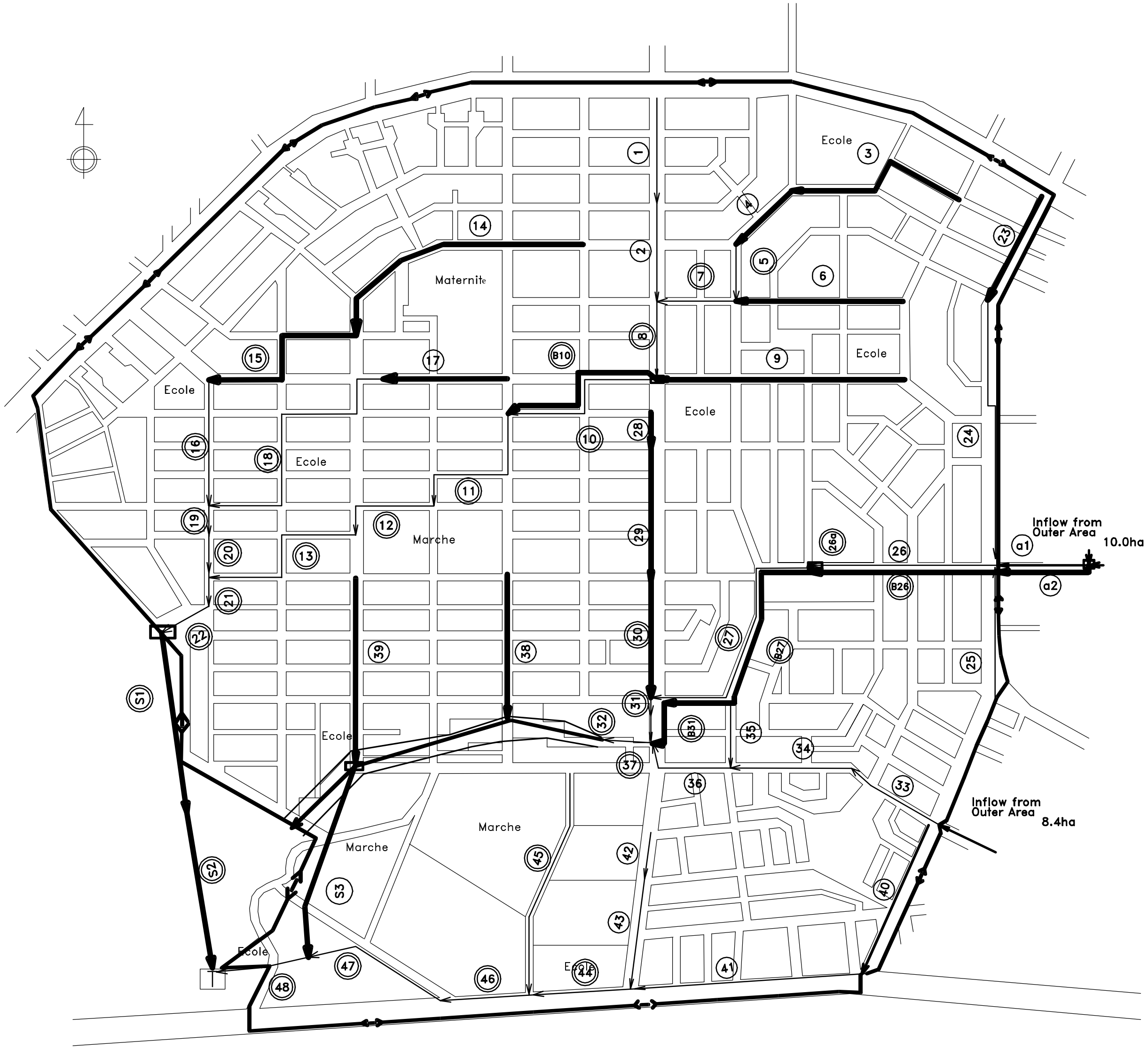
PLAN A. EGOUTS / CANIVEAUX

ETUDE SUR L'AMELIORATION DE L'ASSAINISSEMENT DE LA VILLE DE NIAMEY EN REPUBLIQUE DU NIGER

PLAN NO.A-101
ZONE C3 CANIVEAUX EXISTANTS

SCALE	

AGENCE JAPONAISE DE COOPERATION INTERNATIONALE



LEGENDE	
	ZONE DU TRAITMENT DES EAUX USEES
	EGOUT PRINCIPAL PROJETE
	EGOUT EXISTANT
	EGOUT PRINCIPAL
	EGOUT SECONDAIRE
	DEVERSOIR
T	STATION UASB

0 100 200m

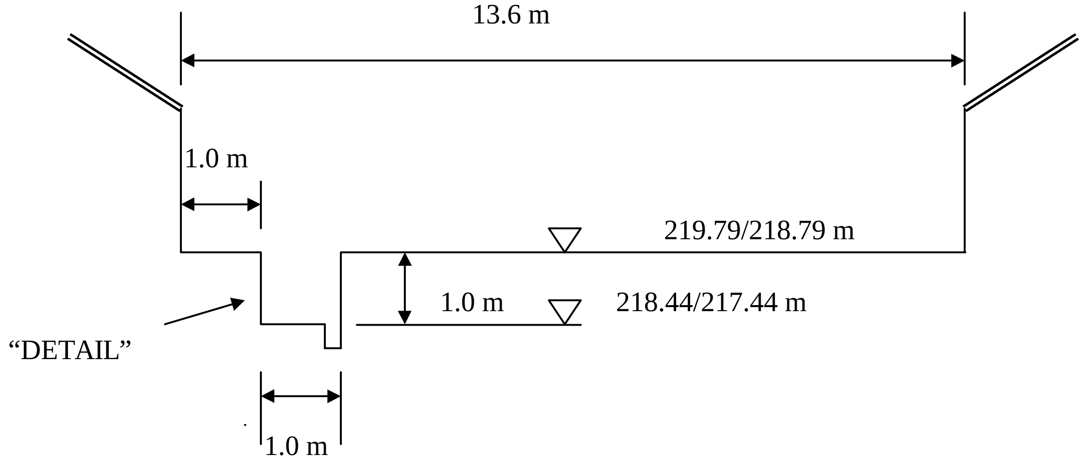
ETUDE SUR L'AMELIORATION DE L'ASSAINISSEMENT
DE LA VILLE DE NIAMEY EN REPUBLIQUE DU NIGER

PLAN NO.A-102
ZONE C3 PLAN GENERAL
DES CANIVEAUX

SCALE	

AGENCE JAPONAISE DE COOPERATION INTERNATIONALE

LIGNES	3
LONGUEUR	340 M
TYPE & DIMENSION	U 1000 X 1000
INCLINAISON	2.9 ‰
NIVEAU DE FOND DEPART/FIN	218.44 / 217.44
NIVEAU DU SOL DEPART/FIN	219.79 / 218.79



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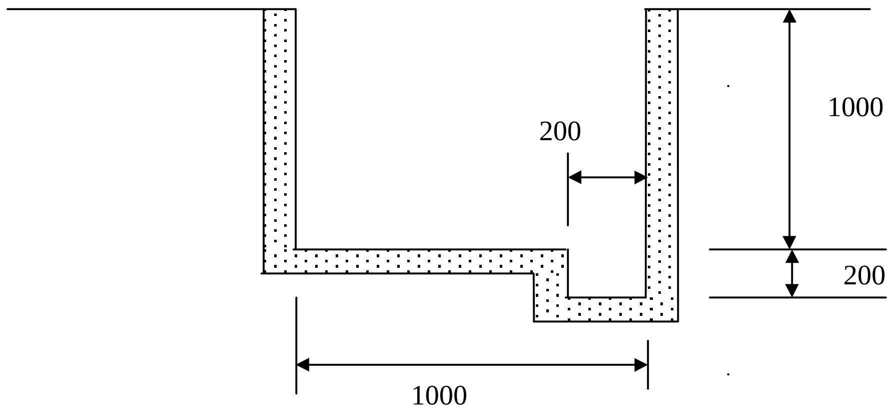
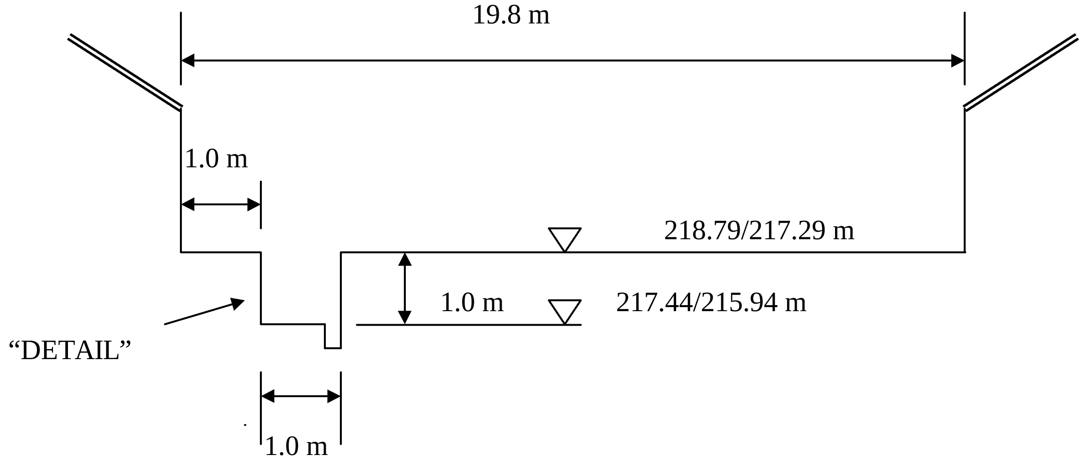


ETUDE SUR L’AMELIORATION DE L’ASSAINISSEMENT DE LA VILLE DE NIAMEY EN REPUBLIQUE DU NIGER	**A-111**
COUPE TRANSVERSALE TYPIQUE DES CONDUITES DES EAUX USEES ET DES EAUX PLUVIALES	
AGENCE JAPONAISE COOPERATION INTERNATIONALE	

LIGNES	4
LONGUEUR	150 M
TYPE & DIMENSION	U 1000 X 1000
INCLINAISON	10.0 ‰
NIVEAU DE FOND DEPART/FIN	217.44/215.94
NIVEAU DU SOL DEPART/FIN	218.79/217.29



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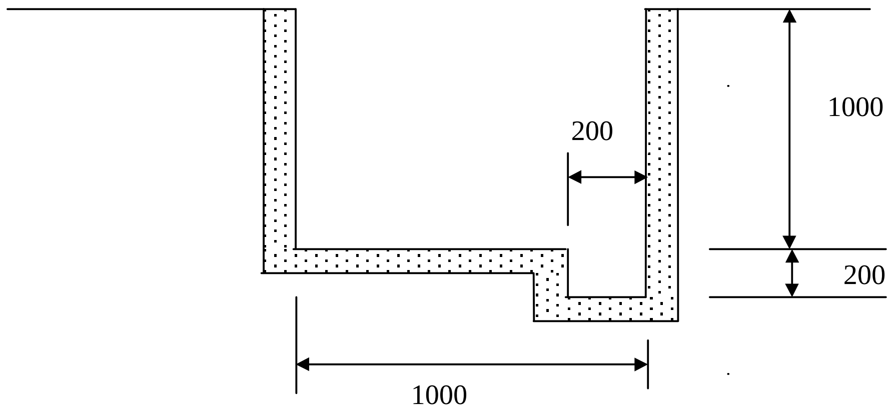
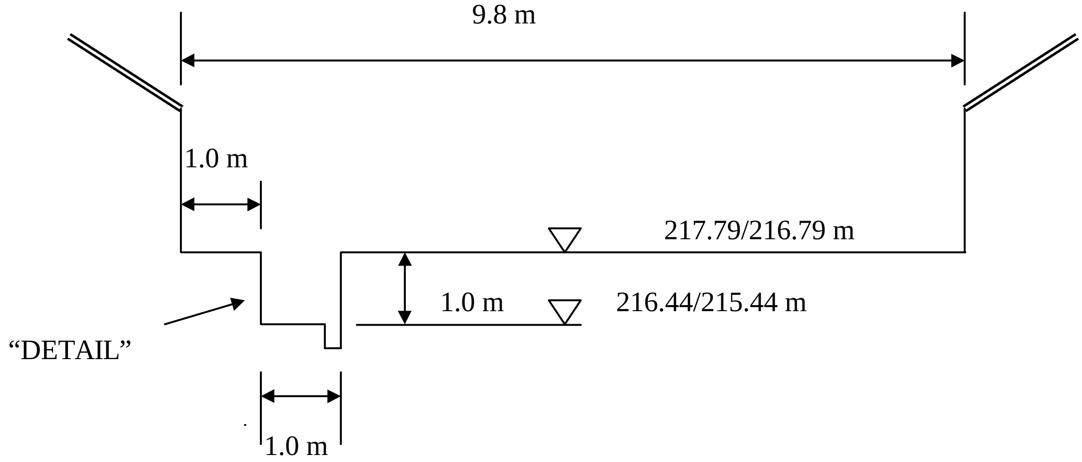


ETUDE SUR L'AMELIORATION DE L'ASSAINISSEMENT DE LA VILLE DE NIAMEY EN REPUBLIQUE DU NIGER	**A-112**
COUPE TRANSVERSALE TYPIQUE DES CONDUITES DES EAUX USEES ET DES EAUX PLUVIALES	
AGENCE JAPONAISE COOPERATION INTERNATIONALE	

LIGNES	6
LONGUEUR	320 M
TYPE & DIMENSION	U 1000 X 1000
INCLINAISON	3.1 ‰
NIVEAU DE FOND DEPART/FIN	216.44/215.44
NIVEAU DU SOL DEPART/FIN	217.79/216.79



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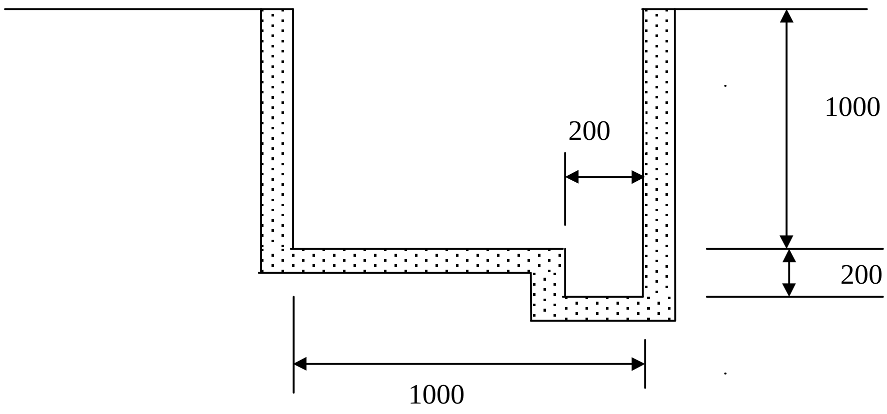
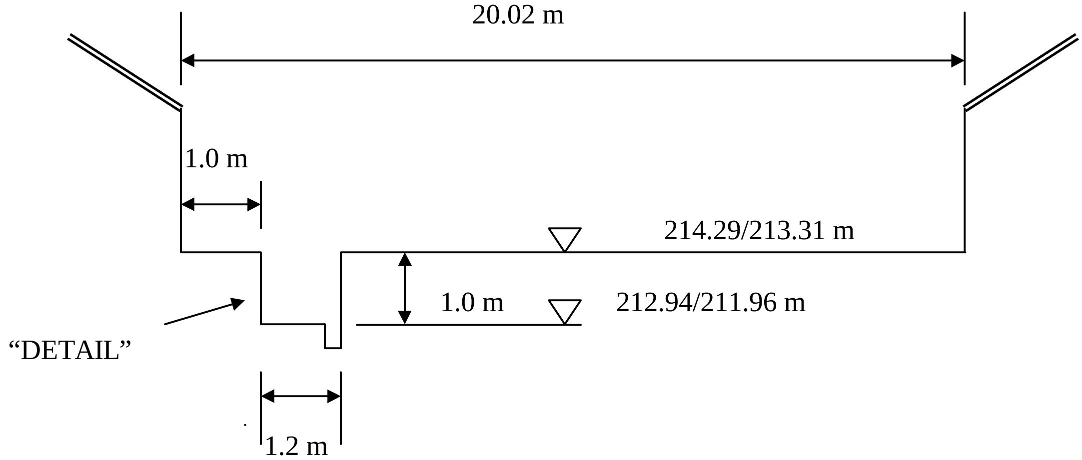


ETUDE SUR L’AMELIORATION DE L’ASSAINISSEMENT DE LA VILLE DE NIAMEY EN REPUBLIQUE DU NIGER	**A-113**
COUPE TRANSVERSALE TYPIQUE DES CONDUITES DES EAUX USEES ET DES EAUX PLUVIALES	
AGENCE JAPONAISE COOPERATION INTERNATIONALE	

LIGNES	9
LONGUEUR	470 M
TYPE & DIMENSION	U 1200 X 1000
INCLINAISON	2.1 ‰
NIVEAU DE FOND DEPART/FIN	212.94/211.96
NIVEAU DU SOL DEPART/FIN	214.29/213.31



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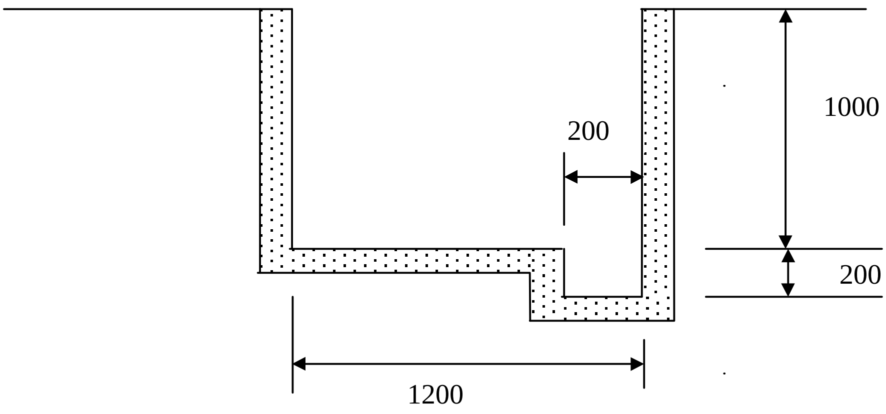

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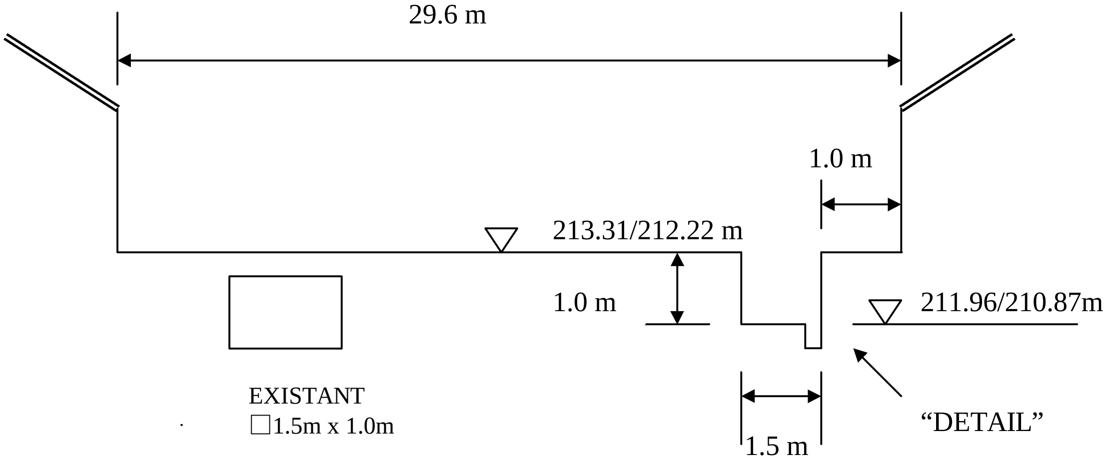
COUPE TRANSVERSALE TYPIQUE DES CONDUITES DES EAUX USEES ET DES EAUX PLUVIALES	
AGENCE JAPONAISE COOPERATION INTERNATIONALE	

LIGNES	B10
LONGUEUR	360 M
TYPE & DIMENSION	U 1500 X 1000
INCLINAISON	3.0 ‰
NIVEAU DE FOND DEPART/FIN	211.96/210.87
NIVEAU DU SOL DEPART/FIN	213.31/212.22



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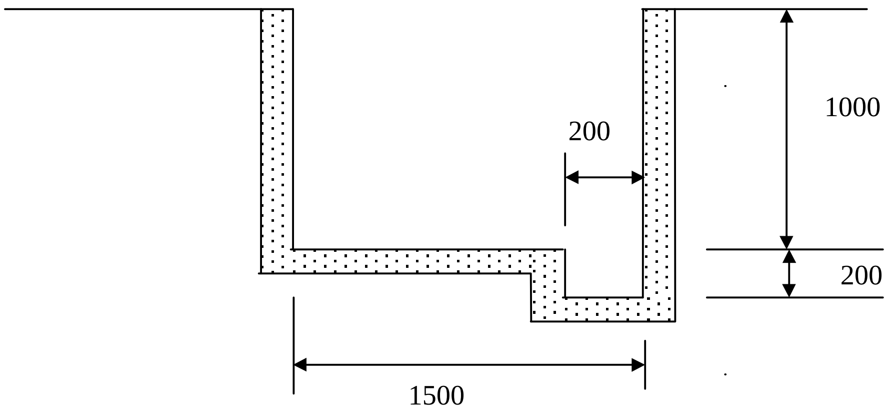
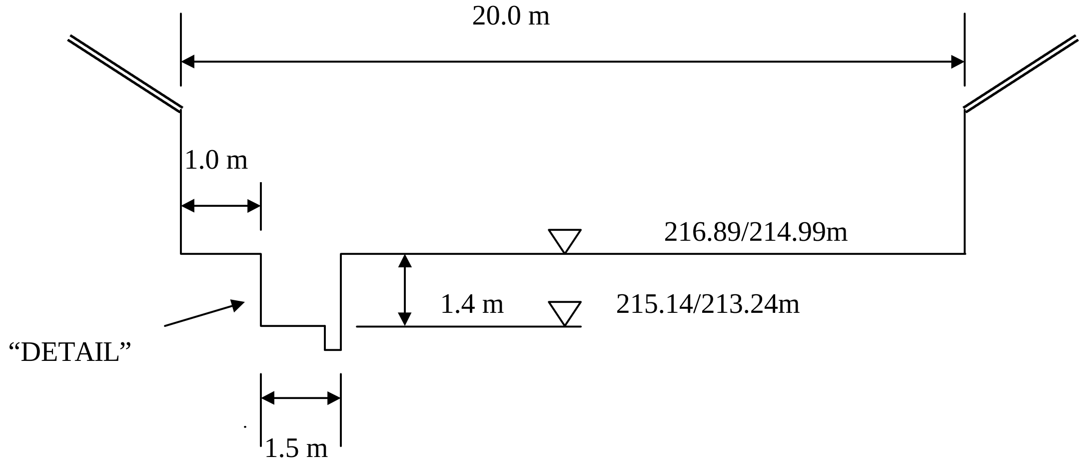


ETUDE SUR L'AMELIORATION DE L'ASSAINISSEMENT DE LA VILLE DE NIAMEY EN REPUBLIQUE DU NIGER	**A-115**
COUPE TRANSVERSALE TYPIQUE DES CONDUITES DES EAUX USEES ET DES EAUX PLUVIALES	
AGENCE JAPONAISE COOPERATION INTERNATIONALE	

LIGNES	14
LONGUEUR	540 M
TYPE & DIMENSION	U 1500 X 1400
INCLINAISON	3.5 ‰
NIVEAU DE FOND DEPART/FIN	215.14/213.24
NIVEAU DU SOL DEPART/FIN	216.89/214.99



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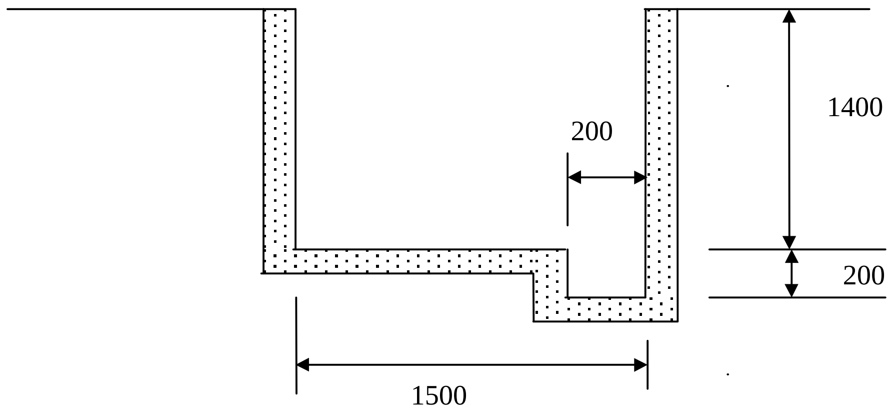
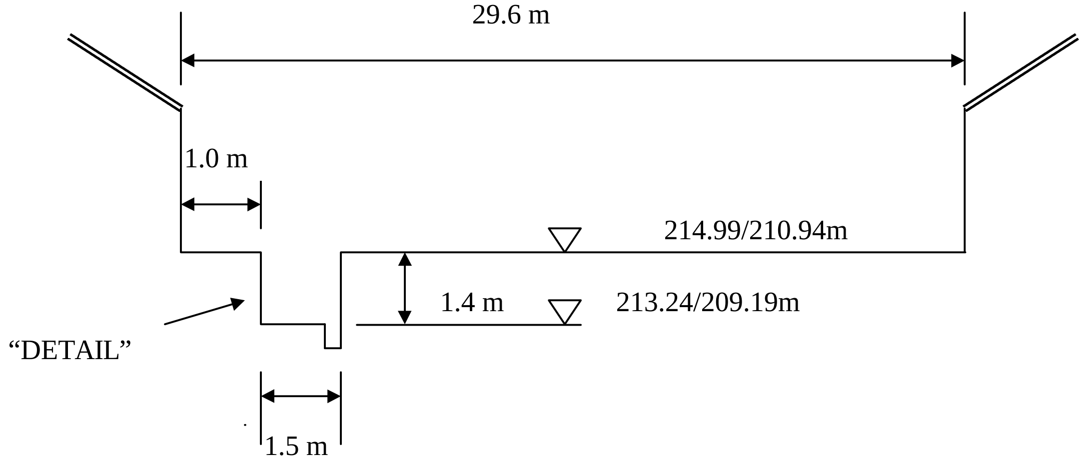


ETUDE SUR L'AMELIORATION DE L'ASSAINISSEMENT DE LA VILLE DE NIAMEY EN REPUBLIQUE DU NIGER	**A-116**
COUPE TRANSVERSALE TYPIQUE DES CONDUITES DES EAUX USEES ET DES EAUX PLUVIALES	
AGENCE JAPONAISE COOPERATION INTERNATIONALE	

LIGNES	15
LONGUEUR	360 M
TYPE & DIMENSION	U 1500 X 1400
INCLINAISON	11.3 ‰
NIVEAU DE FOND DEPART/FIN	213.24/209.19
NIVEAU DU SOL DEPART/FIN	214.99/210.94



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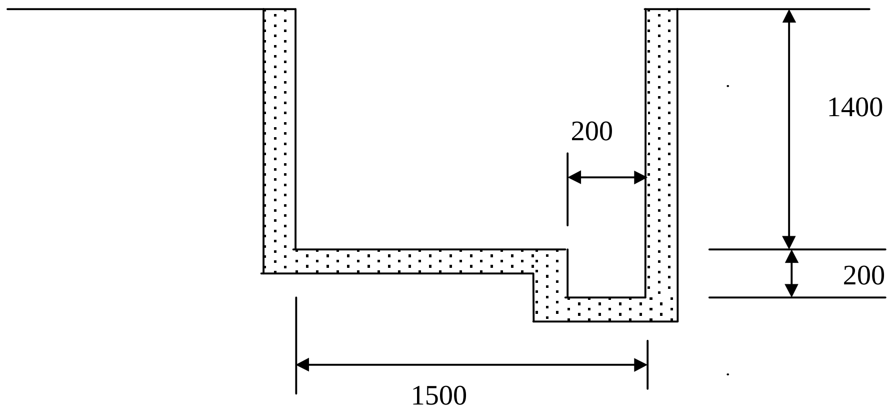


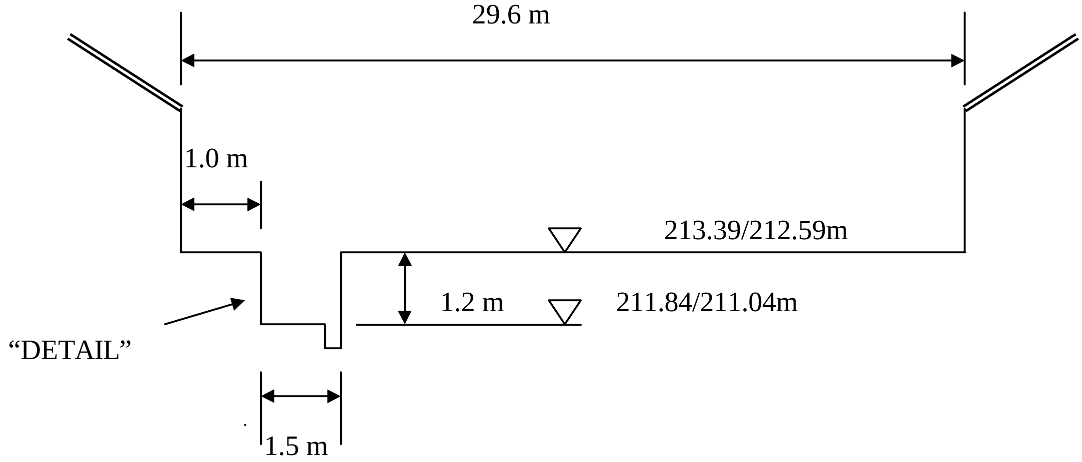
ETUDE SUR L'AMELIORATION DE L'ASSAINISSEMENT DE LA VILLE DE NIAMEY EN REPUBLIQUE DU NIGER

A-117

COUPE TRANSVERSALE TYPIQUE DES CONDUITES DES EAUX USEES ET DES EAUX PLUVIALES

AGENCE JAPONAISE COOPERATION INTERNATIONALE

LIGNES	17
LONGUEUR	240 M
TYPE & DIMENSION	U 1500 X 1200
INCLINAISON	3.3 ‰
NIVEAU DE FOND DEPART/FIN	211.84/211.04
NIVEAU DU SOL DEPART/FIN	213.39/212.59



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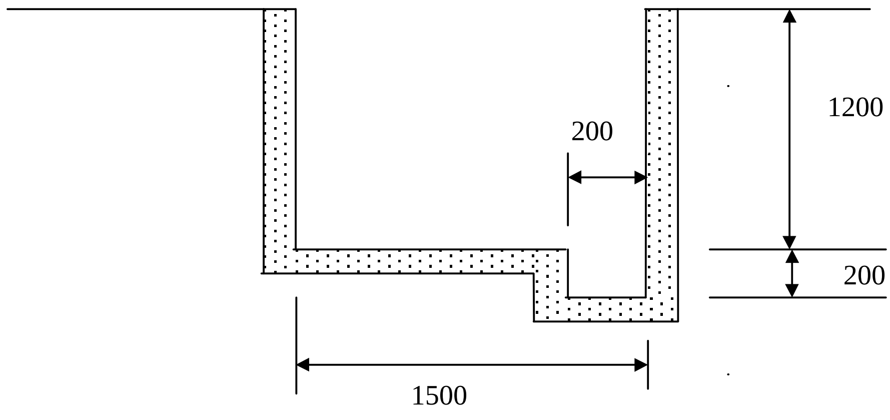
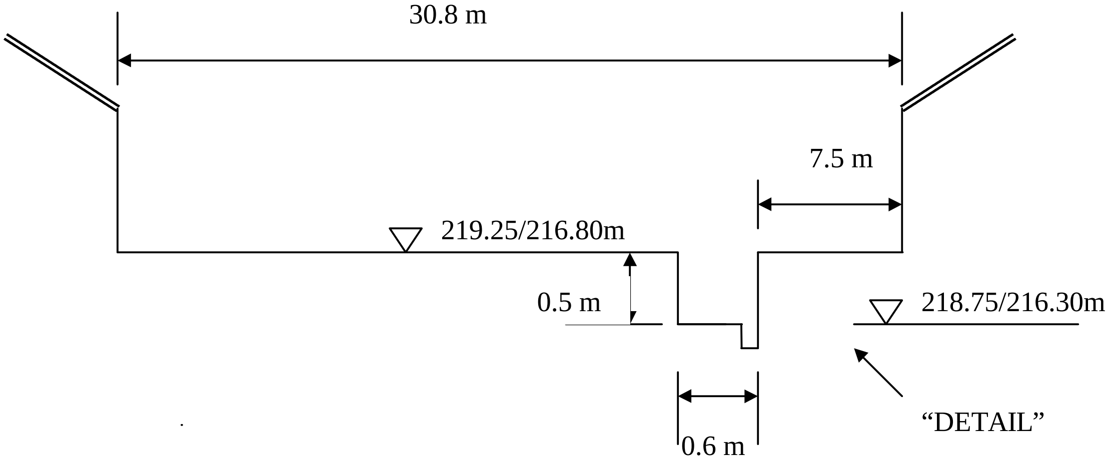


ETUDE SUR L’AMELIORATION DE L’ASSAINISSEMENT DE LA VILLE DE NIAMEY EN REPUBLIQUE DU NIGER	**A-118**
COUPE TRANSVERSALE TYPIQUE DES CONDUITES DES EAUX USEES ET DES EAUX PLUVIALES	
AGENCE JAPONAISE COOPERATION INTERNATIONALE	

LIGNES	23
LONGUEUR	220 M
TYPE & DIMENSION	U 600 X 500
INCLINAISON	11.1 ‰
NIVEAU DE FOND DEPART/FIN	218.75/216.30
NIVEAU DU SOL DEPART/FIN	219.25/216.80



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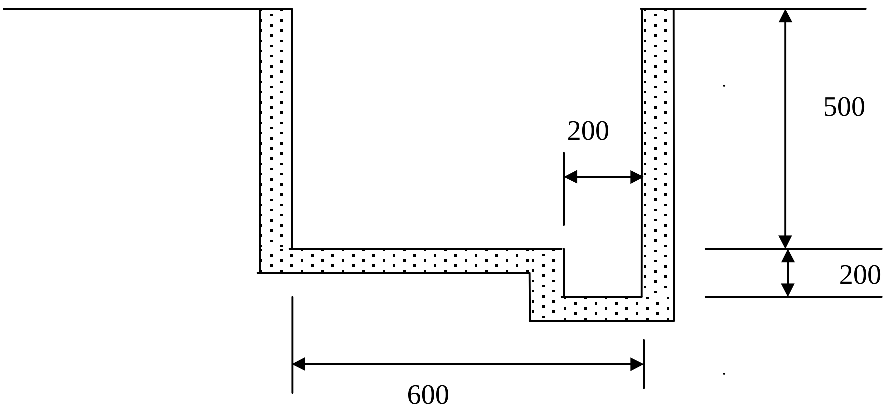
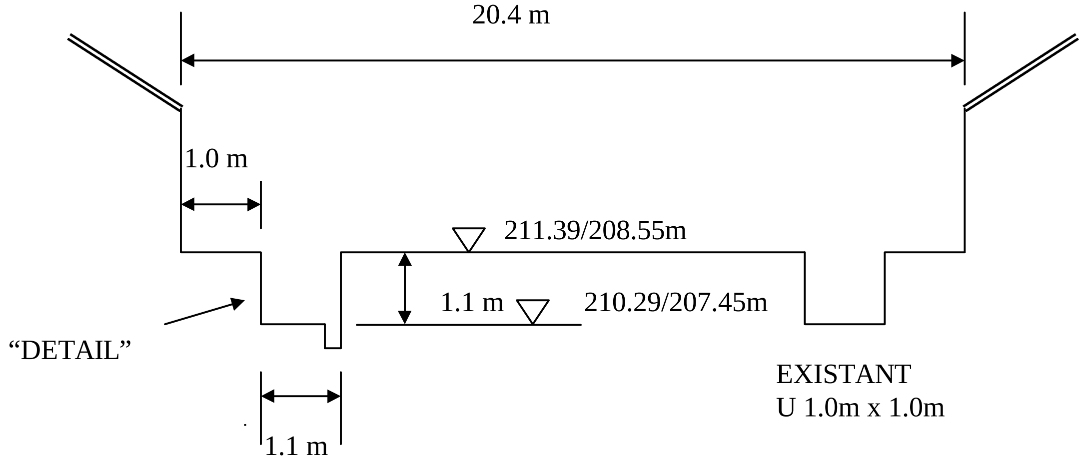


ETUDE SUR L'AMELIORATION DE L'ASSAINISSEMENT DE LA VILLE DE NIAMEY EN REPUBLIQUE DU NIGER	**A-119**
COUPE TRANSVERSALE TYPIQUE DES CONDUITES DES EAUX USEES ET DES EAUX PLUVIALES	
AGENCE JAPONAISE COOPERATION INTERNATIONALE	

LIGNES	B26
LONGUEUR	360 M
TYPE & DIMENSION	U 1100 X 1100
INCLINAISON	7.9 ‰
NIVEAU DE FOND DEPART/FIN	210.29/207.45
NIVEAU DU SOL DEPART/FIN	211.39/208.55



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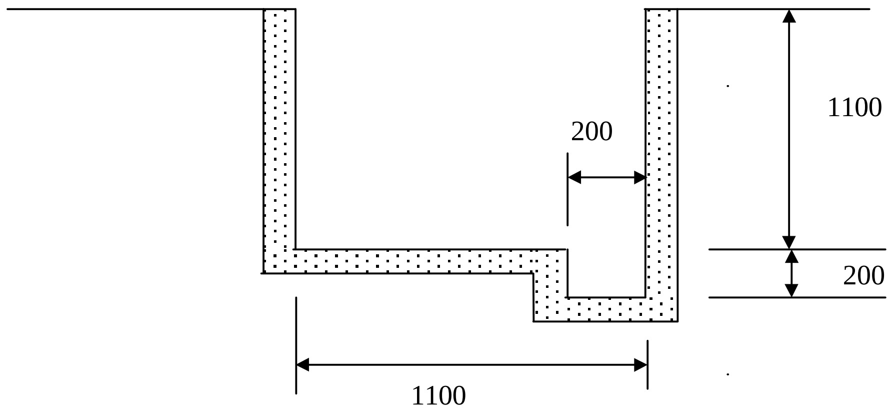
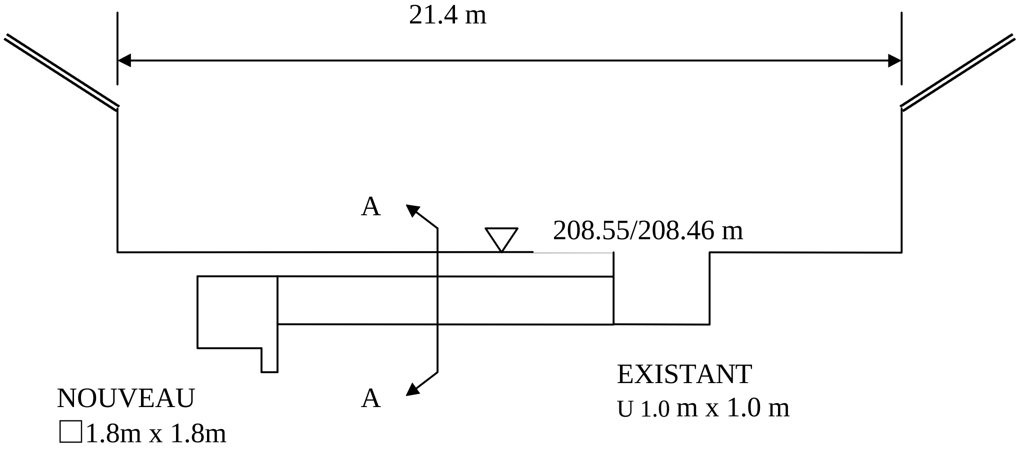
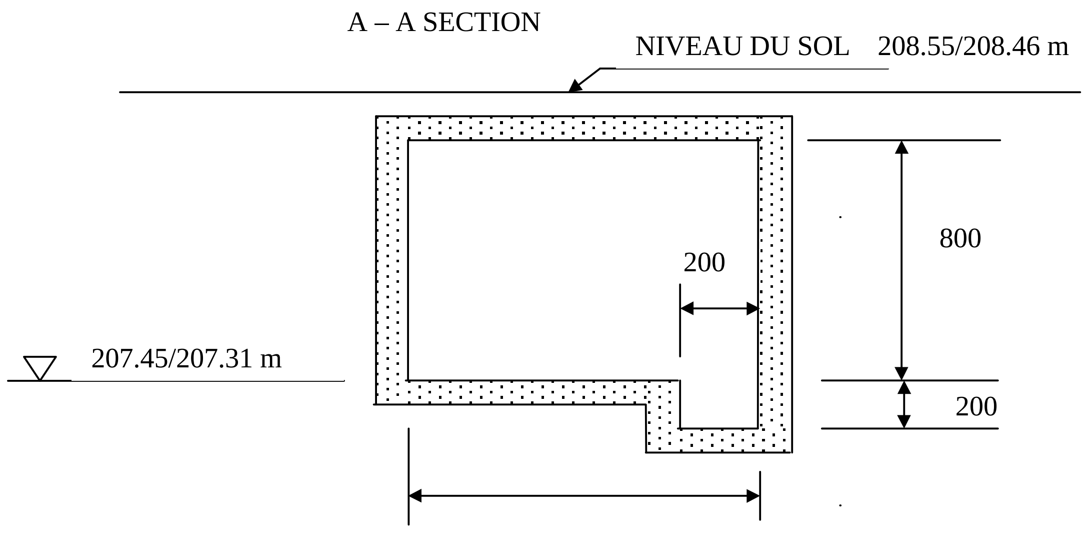


ETUDE SUR L'AMELIORATION DE L'ASSAINISSEMENT DE LA VILLE DE NIAMEY EN REPUBLIQUE DU NIGER	**A-120**
COUPE TRANSVERSALE TYPIQUE DES CONDUITES DES EAUX USEES ET DES EAUX PLUVIALES	
AGENCE JAPONAISE COOPERATION INTERNATIONALE	

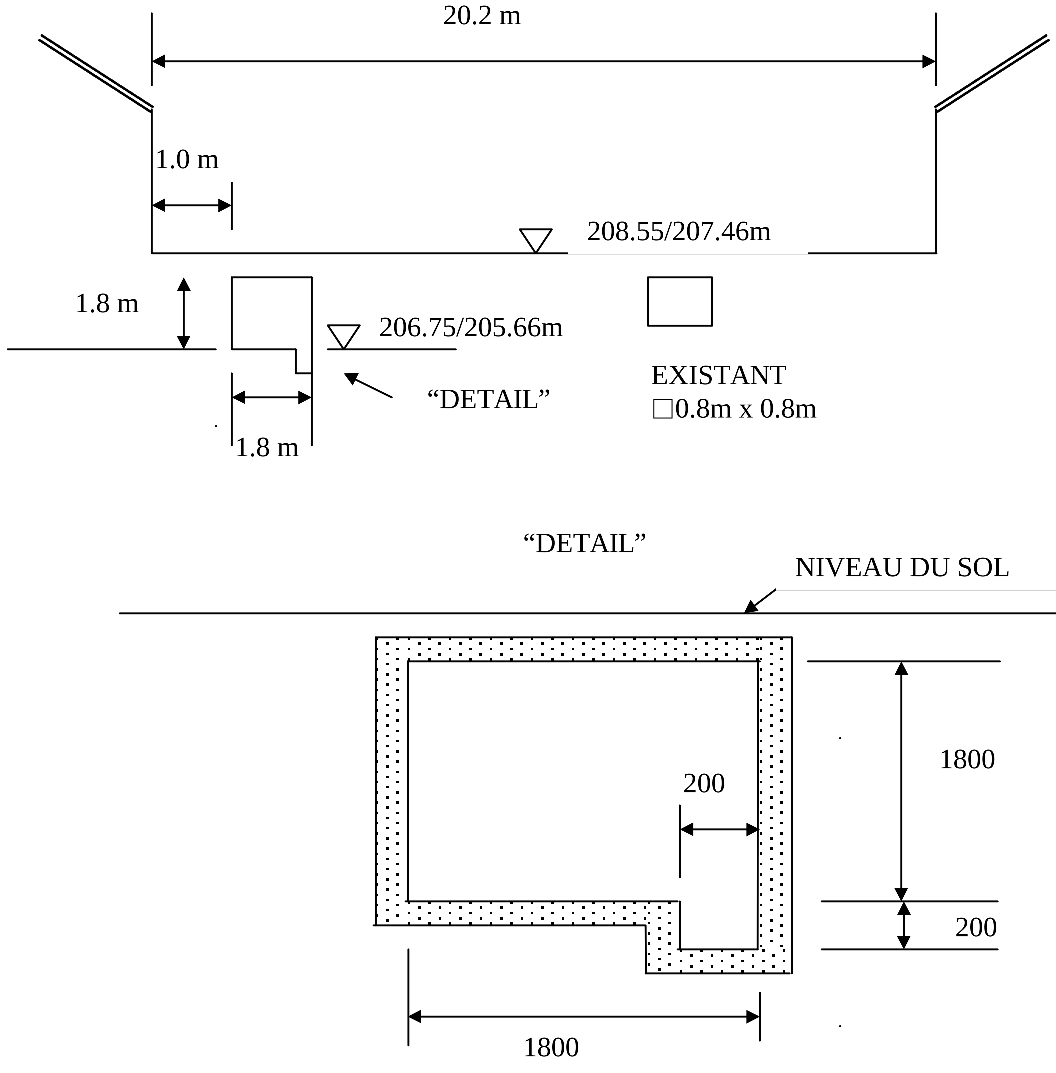
LIGNES	26A
LONGUEUR	5 M
TYPE & DIMENSION	□ 800 X 800
INCLINAISON	28.0 ‰
NIVEAU DE FOND DEPART/FIN	207.45/207.31
NIVEAU DU SOL DEPART/FIN	208.55/208.46





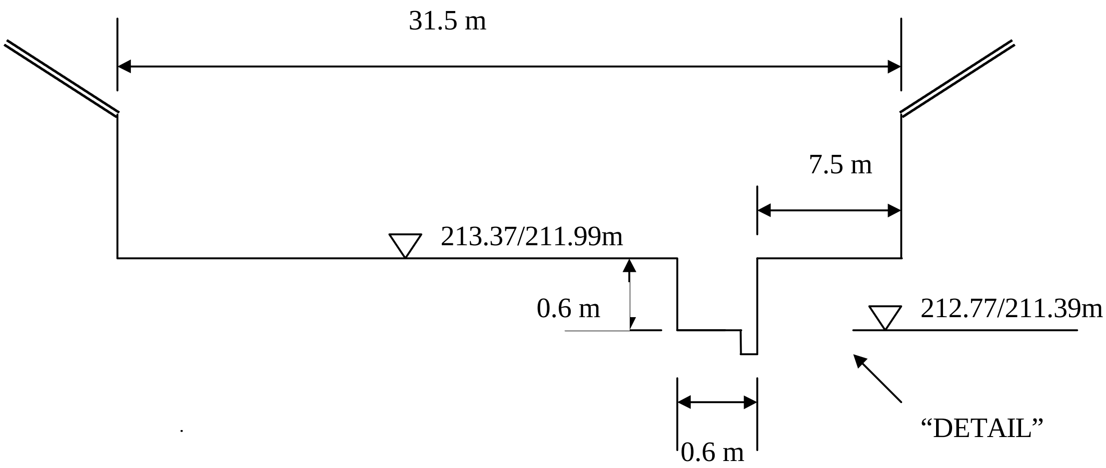
ETUDE SUR L'AMELIORATION DE L'ASSAINISSEMENT DE LA VILLE DE NIAMEY EN REPUBLIQUE DU NIGER	**A-121**
COUPE TRANSVERSALE TYPIQUE DES CONDUITES DES EAUX USEES ET DES EAUX PLUVIALES	
AGENCE JAPONAISE COOPERATION INTERNATIONALE	

LIGNES	B27
LONGUEUR	490 M
TYPE & DIMENSION	□1800 X 1800
INCLINAISON	2.2 ‰
NIVEAU DE FOND DEPART/FIN	206.75/205.66
NIVEAU DU SOL DEPART/FIN	208.55/207.46



ETUDE SUR L'AMELIORATION DE L'ASSAINISSEMENT DE LA VILLE DE NIAMEY EN REPUBLIQUE DU NIGER	**A-122**
COUPE TRANSVERSALE TYPIQUE DES CONDUITES DES EAUX USEES ET DES EAUX PLUVIALES	
AGENCE JAPONAISE COOPERATION INTERNATIONALE	

LIGNES	28
LONGUEUR	70 M
TYPE & DIMENSION	U 600 X 600
INCLINAISON	19.7 ‰
NIVEAU DE FOND DEPART/FIN	212.77/211.39
NIVEAU DU SOL DEPART/FIN	213.37/211.99



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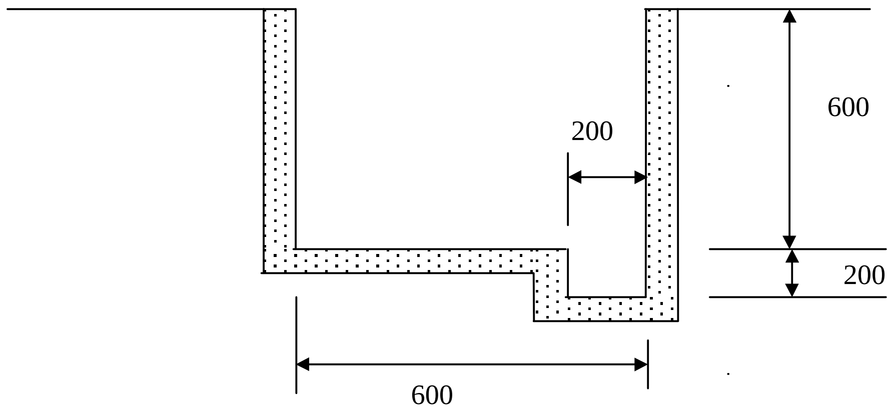
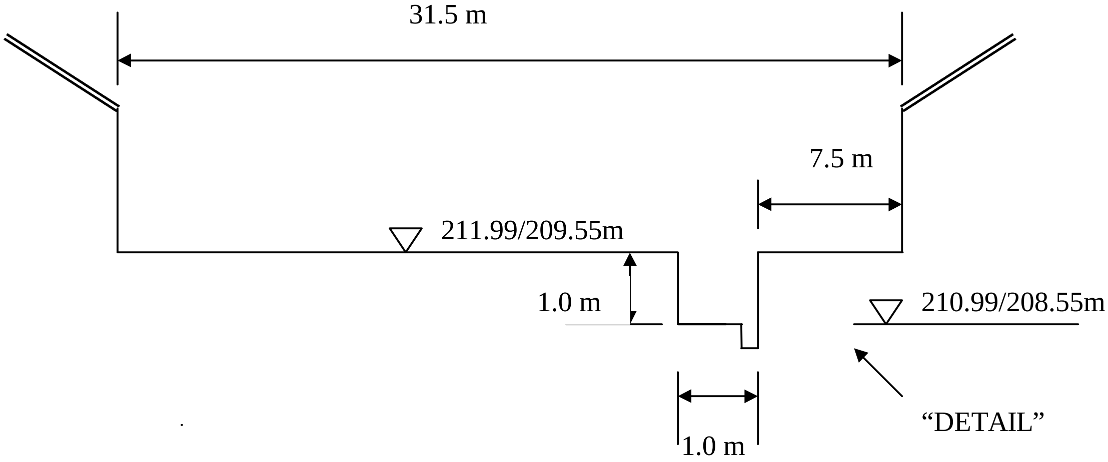


ETUDE SUR L'AMELIORATION DE L'ASSAINISSEMENT DE LA VILLE DE NIAMEY EN REPUBLIQUE DU NIGER	**A-123**
COUPE TRANSVERSALE TYPIQUE DES CONDUITES DES EAUX USEES ET DES EAUX PLUVIALES	
AGENCE JAPONAISE COOPERATION INTERNATIONALE	

LIGNES	29
LONGUEUR	260 M
TYPE & DIMENSION	U 1000 X 1000
INCLINAISON	9.4 ‰
NIVEAU DE FOND DEPART/FIN	210.99/208.55
NIVEAU DU SOL DEPART/FIN	211.99/209.55



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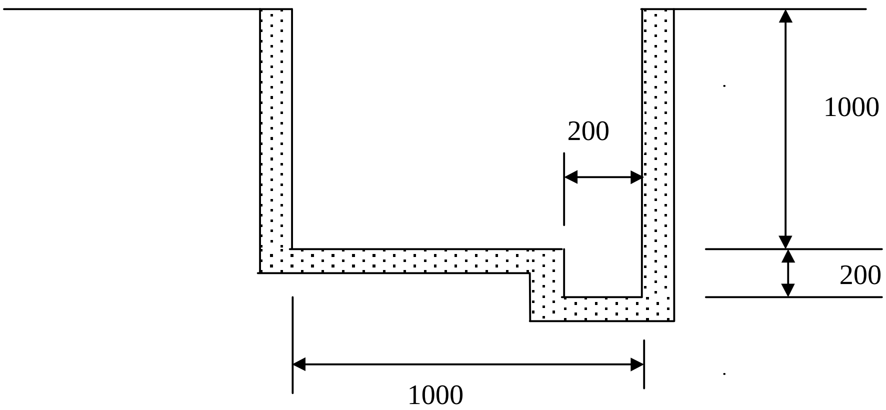


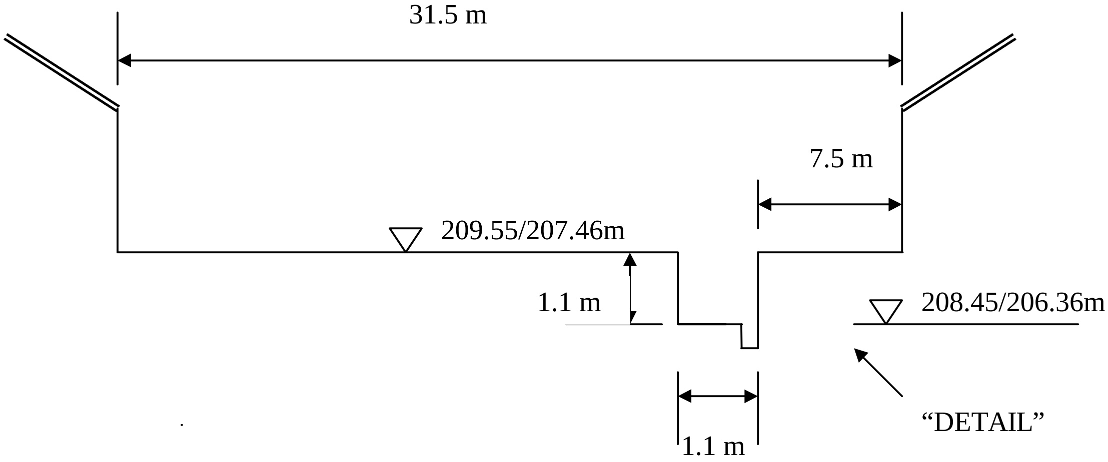
ETUDE SUR L'AMELIORATION DE L'ASSAINISSEMENT DE LA VILLE DE NIAMEY EN REPUBLIQUE DU NIGER

A-124

COUPE TRANSVERSALE TYPIQUE DES CONDUITES DES EAUX USEES ET DES EAUX PLUVIALES

AGENCE JAPONAISE COOPERATION INTERNATIONALE

LIGNES	30
LONGUEUR	210 M
TYPE & DIMENSION	U 1100 X 1100
INCLINAISON	10.0 ‰
NIVEAU DE FOND DEPART/FIN	208.45/206.36
NIVEAU DU SOL DEPART/FIN	209.55/207.46



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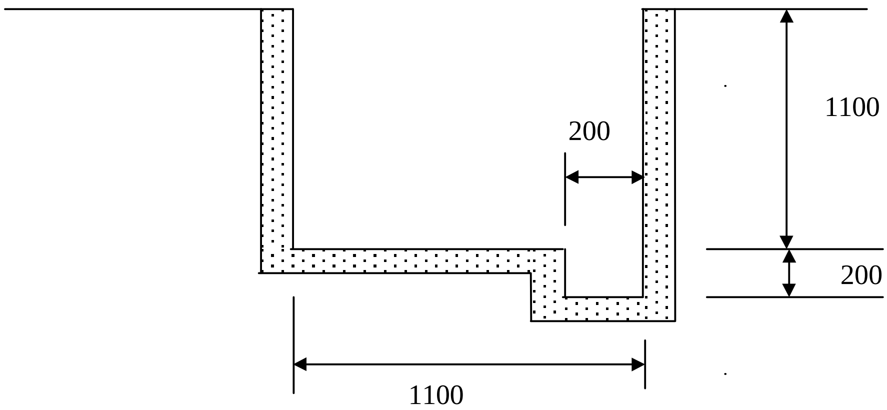
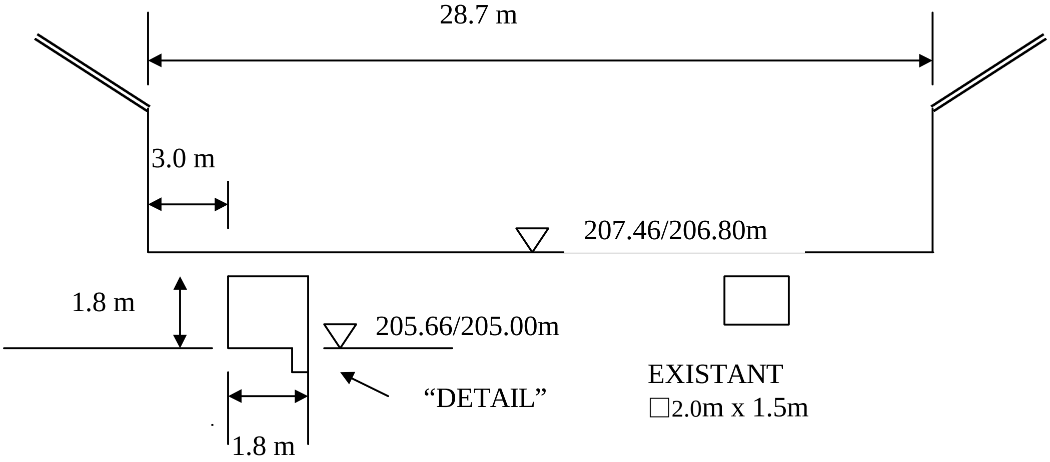
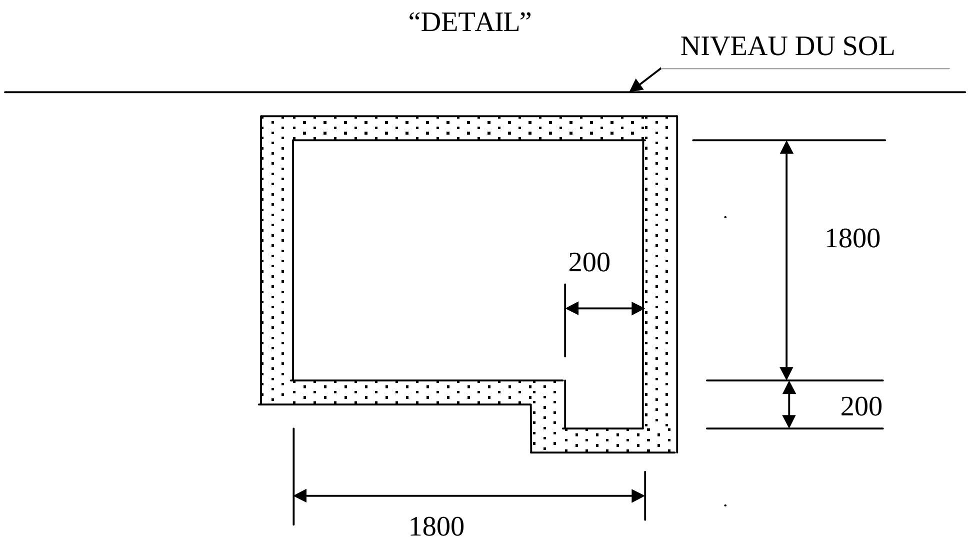


ETUDE SUR L'AMELIORATION DE L'ASSAINISSEMENT DE LA VILLE DE NIAMEY EN REPUBLIQUE DU NIGER	**A-125**
COUPE TRANSVERSALE TYPIQUE DES CONDUITES DES EAUX USEES ET DES EAUX PLUVIALES	
AGENCE JAPONAISE COOPERATION INTERNATIONALE	

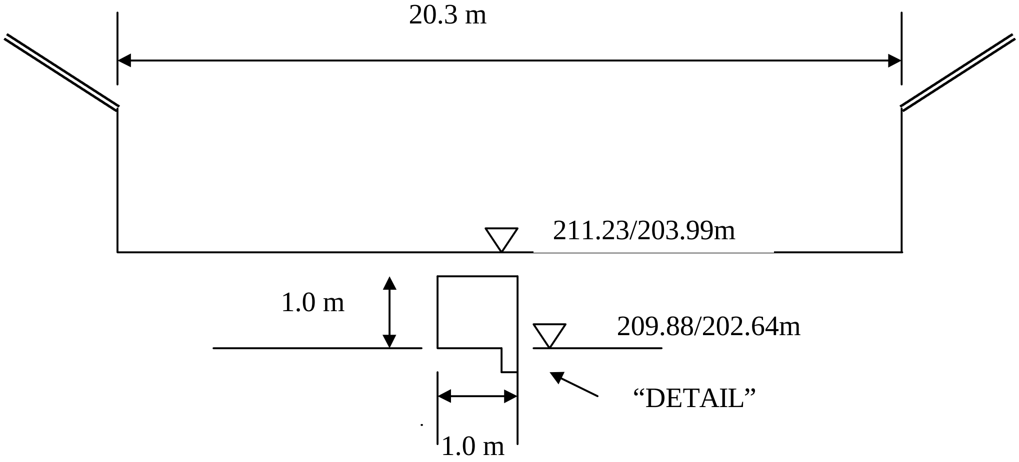
LIGNES	B31
LONGUEUR	150 M
TYPE & DIMENSION	□1800 X 1800
INCLINAISON	4.4 ‰
NIVEAU DE FOND DEPART/FIN	205.66/205.00
NIVEAU DU SOL DEPART/FIN	207.46/206.80





ETUDE SUR L'AMELIORATION DE L'ASSAINISSEMENT DE LA VILLE DE NIAMEY EN REPUBLIQUE DU NIGER	**A-126**
COUPE TRANSVERSALE TYPIQUE DES CONDUITES DES EAUX USEES ET DES EAUX PLUVIALES	
AGENCE JAPONAISE COOPERATION INTERNATIONALE	

LIGNES	38
LONGUEUR	270 M
TYPE & DIMENSION	□1000 X 1000
INCLINAISON	26.8 ‰
NIVEAU DE FOND DEPART/FIN	209.88/202.64
NIVEAU DU SOL DEPART/FIN	211.23/203.99



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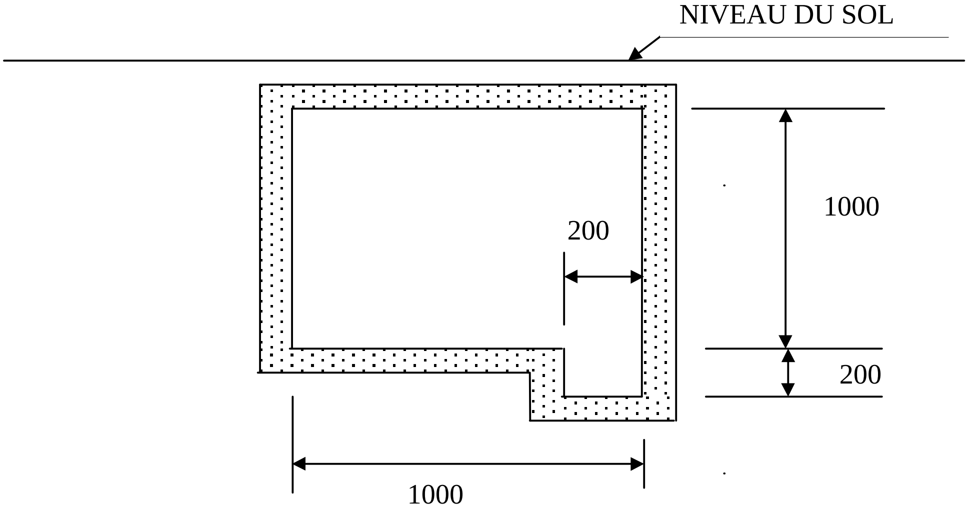
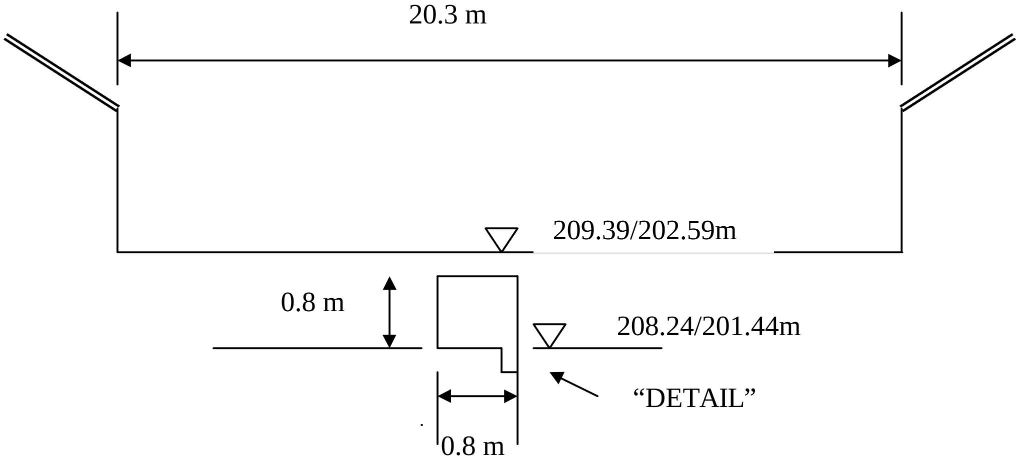


ETUDE SUR L'AMELIORATION DE L'ASSAINISSEMENT DE LA VILLE DE NIAMEY EN REPUBLIQUE DU NIGER	**A-127**
COUPE TRANSVERSALE TYPIQUE DES CONDUITES DES EAUX USEES ET DES EAUX PLUVIALES	
AGENCE JAPONAISE COOPERATION INTERNATIONALE	

LIGNES	39
LONGUEUR	350 M
TYPE & DIMENSION	□800 X 800
INCLINAISON	19.4 ‰
NIVEAU DE FOND DEPART/FIN	208.24/201.44
NIVEAU DU SOL DEPART/FIN	209.39/202.59



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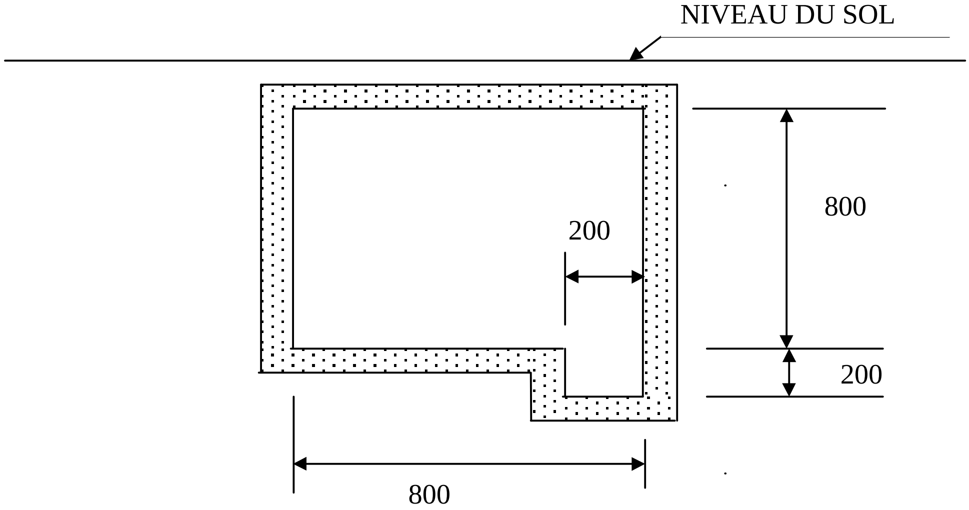
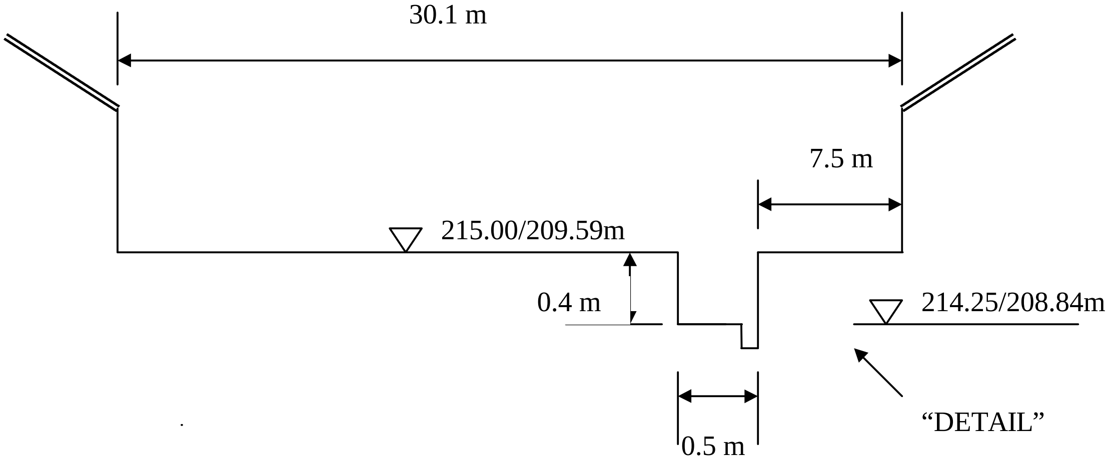


ETUDE SUR L'AMELIORATION DE L'ASSAINISSEMENT DE LA VILLE DE NIAMEY EN REPUBLIQUE DU NIGER	**A-128**
COUPE TRANSVERSALE TYPIQUE DES CONDUITES DES EAUX USEES ET DES EAUX PLUVIALES	
AGENCE JAPONAISE COOPERATION INTERNATIONALE	

LIGNES	40
LONGUEUR	300 M
TYPE & DIMENSION	U 500 X 400
INCLINAISON	18.0 ‰
NIVEAU DE FOND DEPART/FIN	214.25/208.84
NIVEAU DU SOL DEPART/FIN	215.00/209.59



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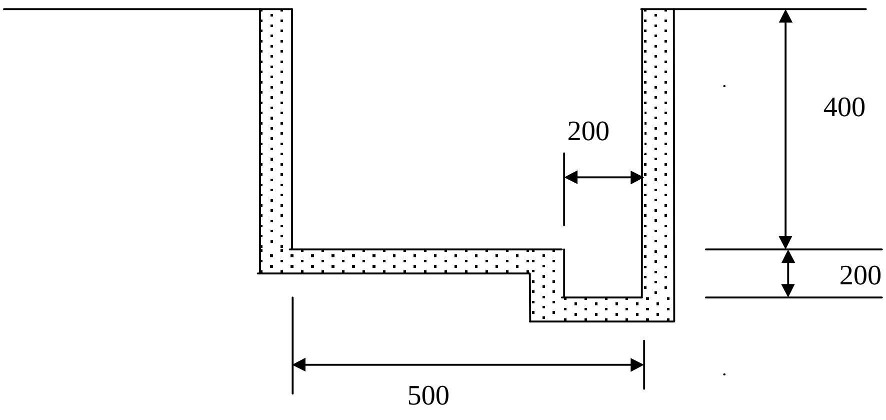
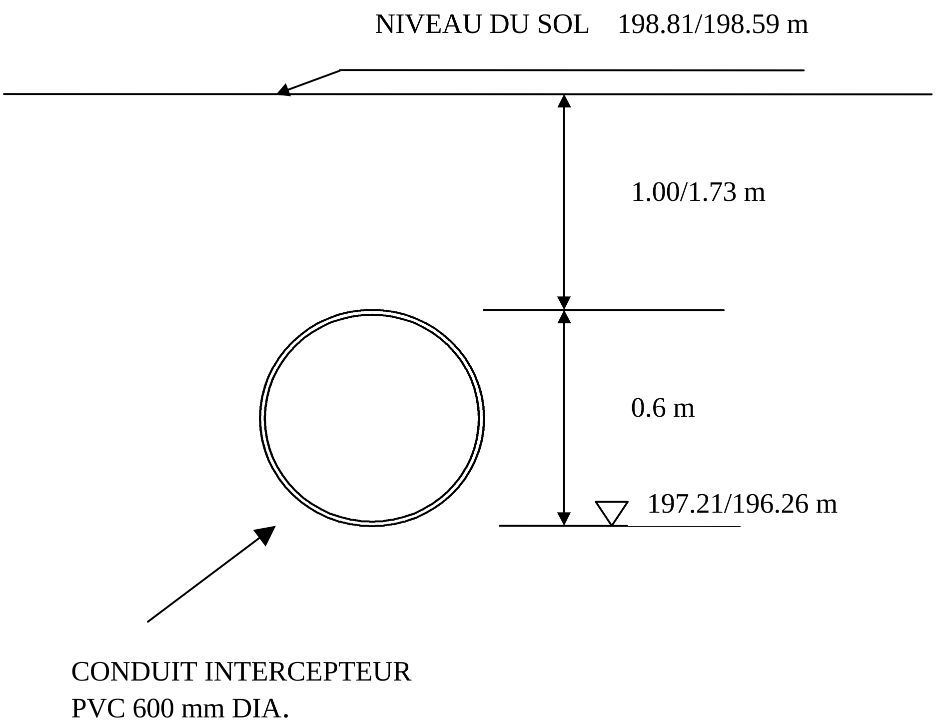


ETUDE SUR L'AMELIORATION DE L'ASSAINISSEMENT DE LA VILLE DE NIAMEY EN REPUBLIQUE DU NIGER	**A-129**
COUPE TRANSVERSALE TYPIQUE DES CONDUITES DES EAUX USEES ET DES EAUX PLUVIALES	
AGENCE JAPONAISE COOPERATION INTERNATIONALE	

LIGNES	S1
LONGUEUR	380 M
TYPE & DIMENSION	ф 600
INCLINAISON	2.5 ‰
NIVEAU DE FOND DEPART/FIN	197.21/196.26
NIVEAU DU SOL DEPART/FIN	198.81/198.59



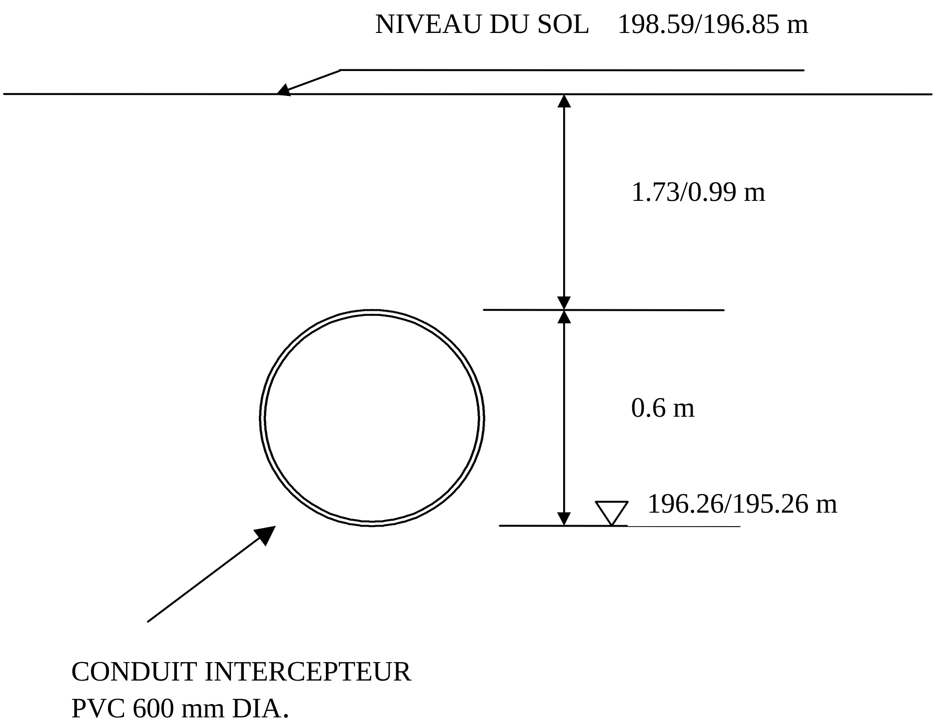
ETUDE SUR L'AMELIORATION DE L'ASSAINISSEMENT DE LA VILLE DE NIAMEY EN REPUBLIQUE DU NIGER

A-130

COUPE TRANSVERSALE TYPIQUE DES CONDUITES DES EAUX USEES ET DES EAUX PLUVIALES

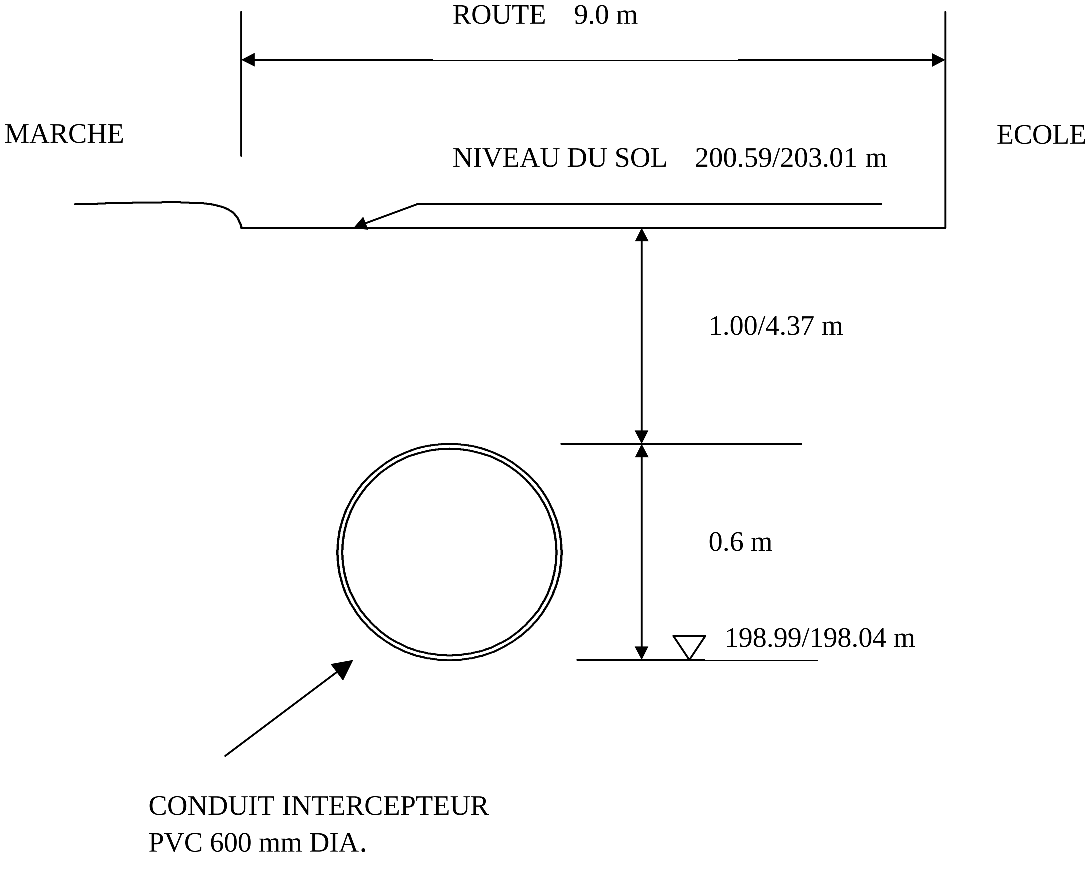
AGENCE JAPONAISE COOPERATION INTERNATIONALE

LIGNES	S2
LONGUEUR	400 M
TYPE & DIMENSION	φ 600
INCLINAISON	2.5 ‰
NIVEAU DE FOND DEPART/FIN	196.26/195.26
NIVEAU DU SOL DEPART/FIN	198.59/196.85

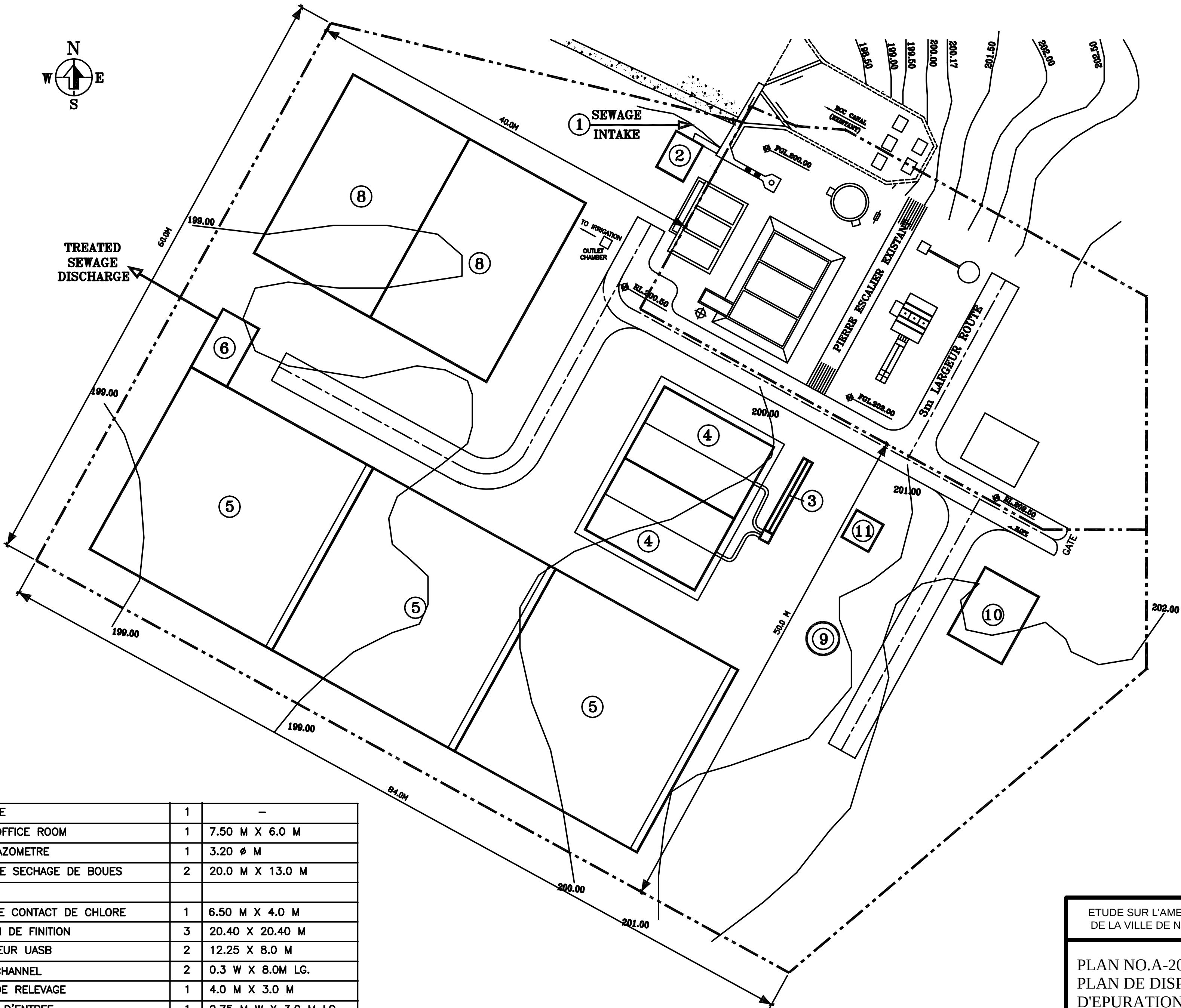


ETUDE SUR L'AMELIORATION DE L'ASSAINISSEMENT DE LA VILLE DE NIAMEY EN REPUBLIQUE DU NIGER	**A-131**
COUPE TRANSVERSALE TYPIQUE DES CONDUITES DES EAUX USEES ET DES EAUX PLUVIALES	
AGENCE JAPONAISE COOPERATION INTERNATIONALE	

LIGNES	S3
LONGUEUR	380 M
TYPE & DIMENSION	ϕ 600
INCLINAISON	2.5 ‰
NIVEAU DE FOND DEPART/FIN	198.99/198.04
NIVEAU DU SOL DEPART/FIN	200.59/203.01



ETUDE SUR L'AMELIORATION DE L'ASSAINISSEMENT DE LA VILLE DE NIAMEY EN REPUBLIQUE DU NIGER	**A-132**
COUPE TRANSVERSALE TYPIQUE DES CONDUITES DES EAUX USEES ET DES EAUX PLUVIALES	
AGENCE JAPONAISE COOPERATION INTERNATIONALE	



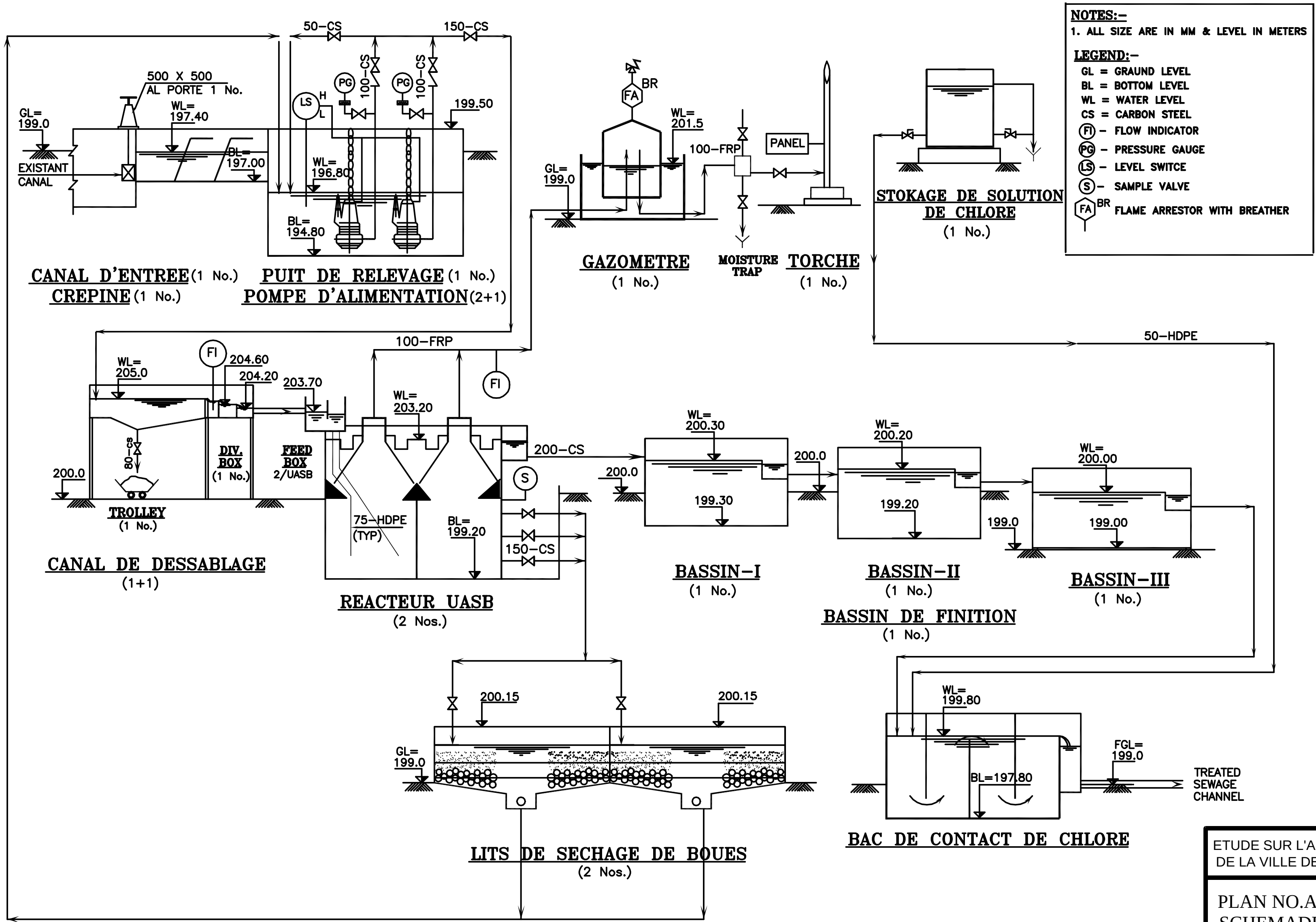
NO. SR.	DESCRIPTION	QTY.	DIMENSION (M X M)
11	TORCHE	1	–
10	MCC/OFFICE ROOM	1	7.50 M X 6.0 M
9	BIO GAZOMETRE	1	3.20 ø M
8	LITS DE SECHAGE DE BOUES	2	20.0 M X 13.0 M
6	BAC DE CONTACT DE CHLORE	1	6.50 M X 4.0 M
5	BASSIN DE FINITION	3	20.40 X 20.40 M
4	REACTEUR UASB	2	12.25 X 8.0 M
3	GRIT CHANNEL	2	0.3 W X 8.0M LG.
2	PUIT DE RELEVAGE	1	4.0 M X 3.0 M
1	CANAL D'ENTREE	1	0.75 M W X 3.0 M LG.

ETUDE SUR L'AMELIORATION DE L'ASSAINISSEMENT
DE LA VILLE DE NIAMEY EN REPUBLIQUE DU NIGER

PLAN NO.A-201
PLAN DE DISPOSITION DE LA STATION
D'EPURATION DES EAUX USEES

SCALE

AGENCE JAPONAISE DE COOPERATION INTERNATIONALE

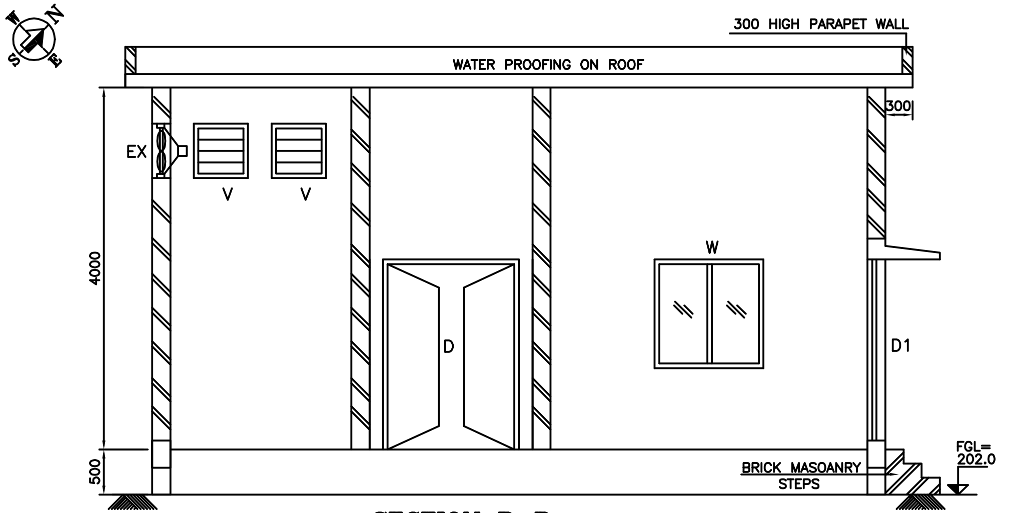


ETUDE SUR L'AMELIORATION DE L'ASSAINISSEMENT DE LA VILLE DE NIAMEY EN REPUBLIQUE DU NIGER

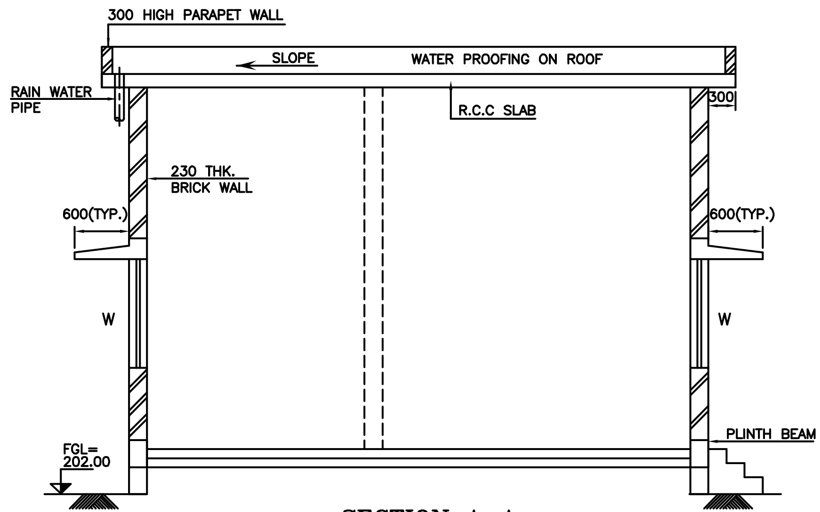
PLAN NO.A-202
SCHEMADE PROCEDE DE LA STATION D'EPURATION DES EAUX USEES

SCALE	

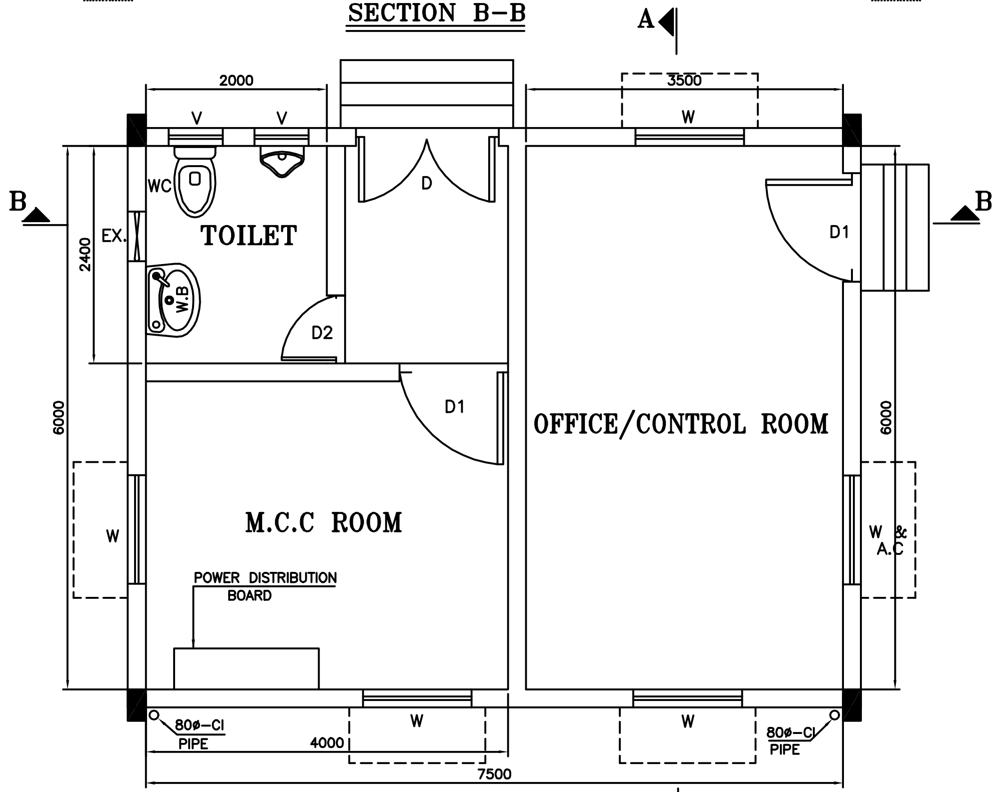
AGENCE JAPONAISE DE COOPERATION INTERNATIONALE



SECTION B–B



SECTION A–A



PLAN

SCHEDULE OF OPENINGS

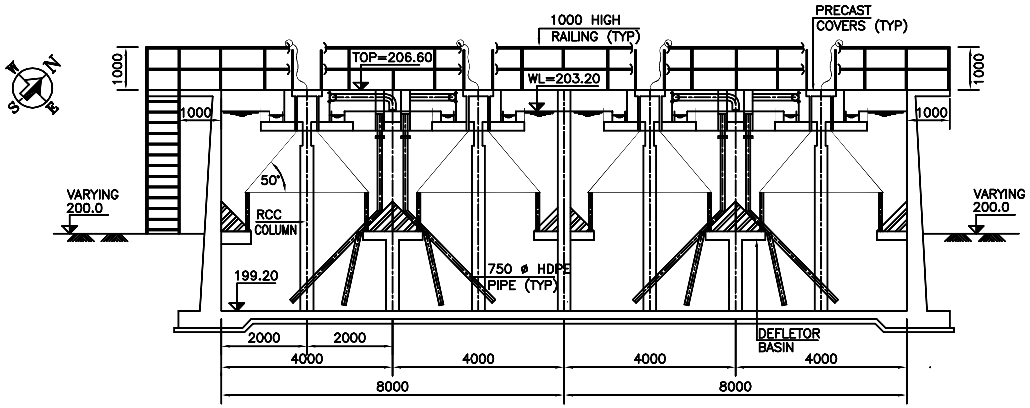
TYPE	DESCRIPTION	Nos.	SIZE (mm)
D	FULLY PANELLED DOOR (DOUBLE SHUTTER)	1	1500x2100
D1	SINGLE SHUTTER DOOR	2	1200x2100
D2	SINGLE SHUTTER DOOR	1	750x2100
W	GLASS WINDOW OPENABLE FROM INSIDE	5	1200x1200
V	VENTILATORS WITH FIXED GLASS	2	600x600
EX.	EXHAUST FAN	1	450ø
AC	AIR CONDITIONING 2 T	1	STD.

ETUDE SUR L'AMELIORATION DE L'ASSAINISSEMENT
DE LA VILLE DE NIAMEY EN REPUBLIQUE DU NIGER

PLAN NO.A-203
DETAILS DU BATIMENT D'ELECTRICITE
ET DE CONTROL DE LA STATION
D'EPURATION DES EAUX USEES

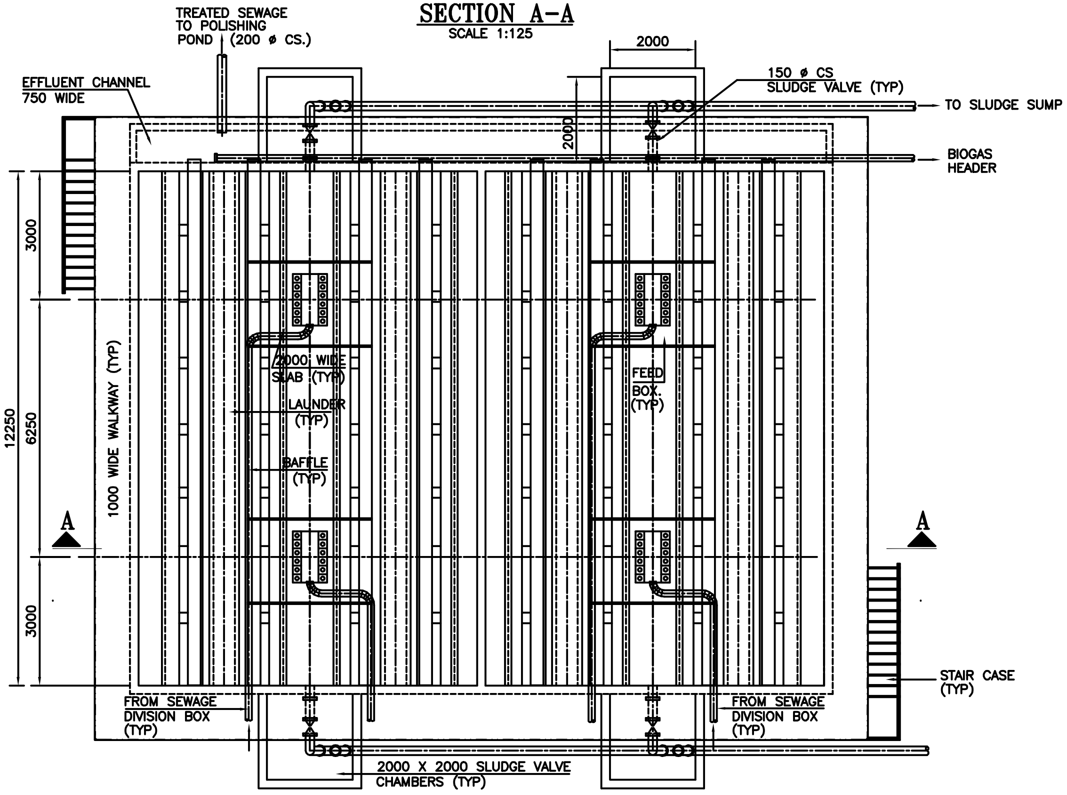
SCALE	

AGENCE JAPONAISE DE COOPERATION INTERNATIONALE



SECTION A-A

SCALE 1:125



PLAN DE REACTUER UASB

NOTES:-

1. ALL DIMENSIONS ARE IN MM & LEVELS ARE IN METERS.

DEFLECTOR BEAM DEPTH	:	670 mm
WALL THICKENESS OF FRP PIPE	:	6 mm(min.)
BIOGAS HEADER PIPE	:	100 ø mm
PVC SHEET THICKENESS	:	10 mm(min.)

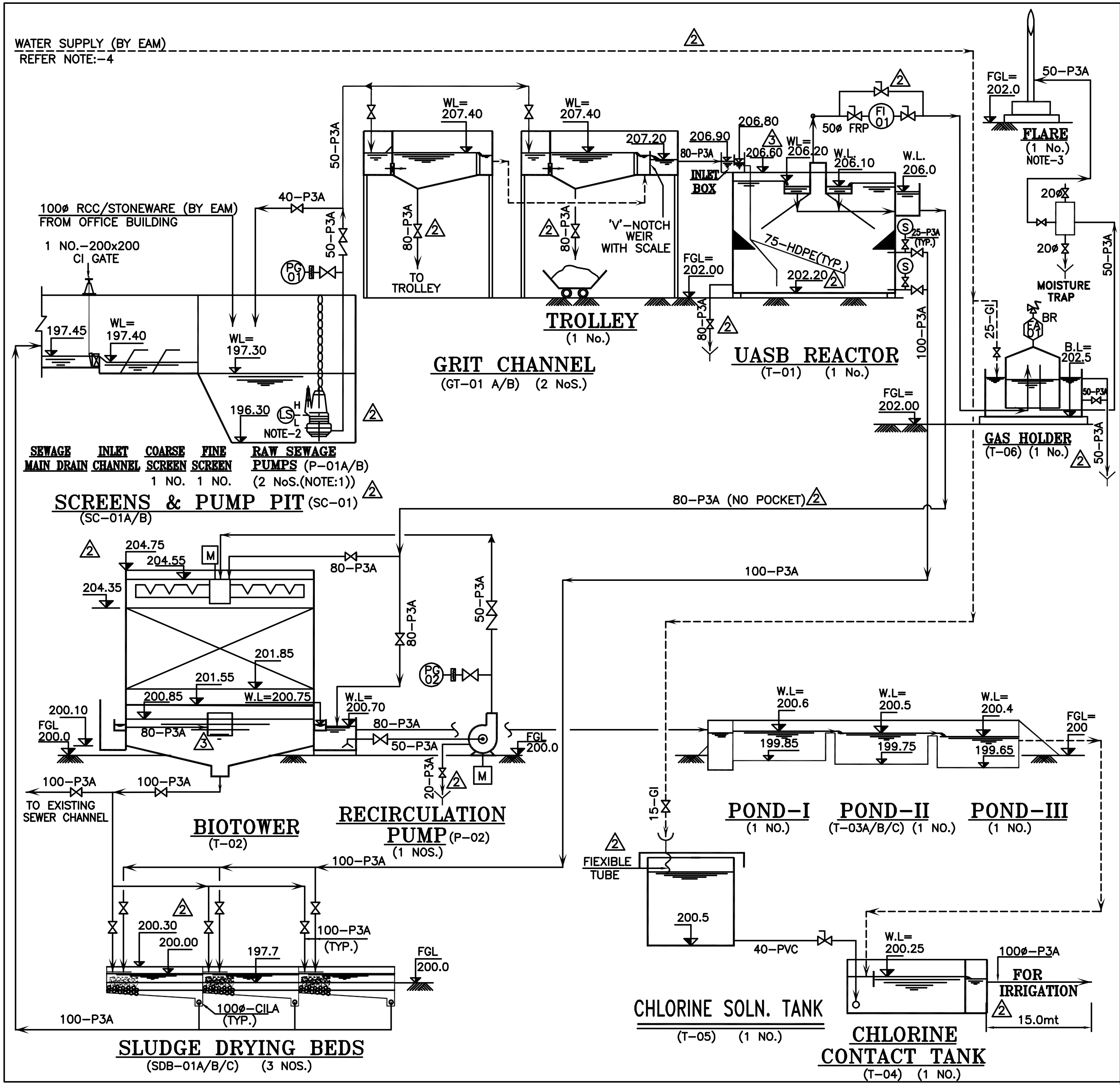
2. FRP ITEMS TO BE SMOOTH FINISH ON ONE SIDE & FACTORY FINISH ON OTHER SIDE.
3. EACH 75 OD HDPE FEED PIPE WILL COVER APPROX. 4 M2 FLOOR AREA TOTAL NO OF FEED PIPES PER UASB WILL BE 24 NOS. (12 NOS PER FEED BOX.)

ETUDE SUR L'AMELIORATION DE L'ASSAINISSEMENT DE LA VILLE DE NIAMEY EN REPUBLIQUE DU NIGER

PLAN NO.A-204
DETAILS DU REACTEUR UASB DE LA STATION D'EPURATION DES EAUX USEES

SCALE

AGENCE JAPONAISE DE COOPERATION INTERNATIONALE



NO.	DATE	REVISION	CHD.	APPD.
1	21.11.00	REVISED AS PER DISCUSSIONS	P.G.A	A.G.S
2	4.12.00	REVISED AS PER PIPING FOR ENGINEERING	P.G.A	A.G.S
3	29.12.00	REVISED AS MARKED.	P.G.A	A.G.S
4	28.07.01	AS BUILT.		

S.NO.	REFERENCE DRAWING	DRAWING NO.
1	LAYOUT	PL/528/L-01

NOTE:-

1. ONE RAW SEWAGE IS PUMP SPARE IN STORE.
2. LEVEL SWITCH IS IN BUILT WITH PUMP.
3. FLARE HEIGHT IS 3.0 M FROM FGL.
4. M/S EAM SHALL PROVIDE TUBE WELL WATER SUPPLY UP TO GAS HOLDER & CHLORINE SOLUTION TANK.

INSTRUMENTS LEGEND:-

FI FLOW INDICATOR
PG PRESSURE GAUGE
S SAMPLING
FA FLAME ARRESTER
BR BREATHER VALVE
FGL: FINISHED GRADE LEVEL
NGL: NATURAL GRADE LEVAL
WL WATER LEVEL
FLOW DIRECTION ONLY
FIELD MOUNTED INSTRUMENT
LS LEVEL SWITCH(HIGH/LOW)

GATE VALVE
BALL VALVE
NON RETURN VALVE
REDUCER
CENTRIFUGAL PUMP
SUBMERSIBLE PUMP
M ELECTRIC MOTOR
GATE

PIPE LEGEND & MATERIAL:-

XX-XX : DIA - PIPE MATERIAL
P3A CARBON STEEL
GI GALVANISED IRON
FRP FIBRE REINFORCED PLASTIC
PVC POLY VINYL CHLORIDE
CILA CAST IRON-CLASS LA
RCC REINFORCED CONCRETE PIPE

AS BUILT

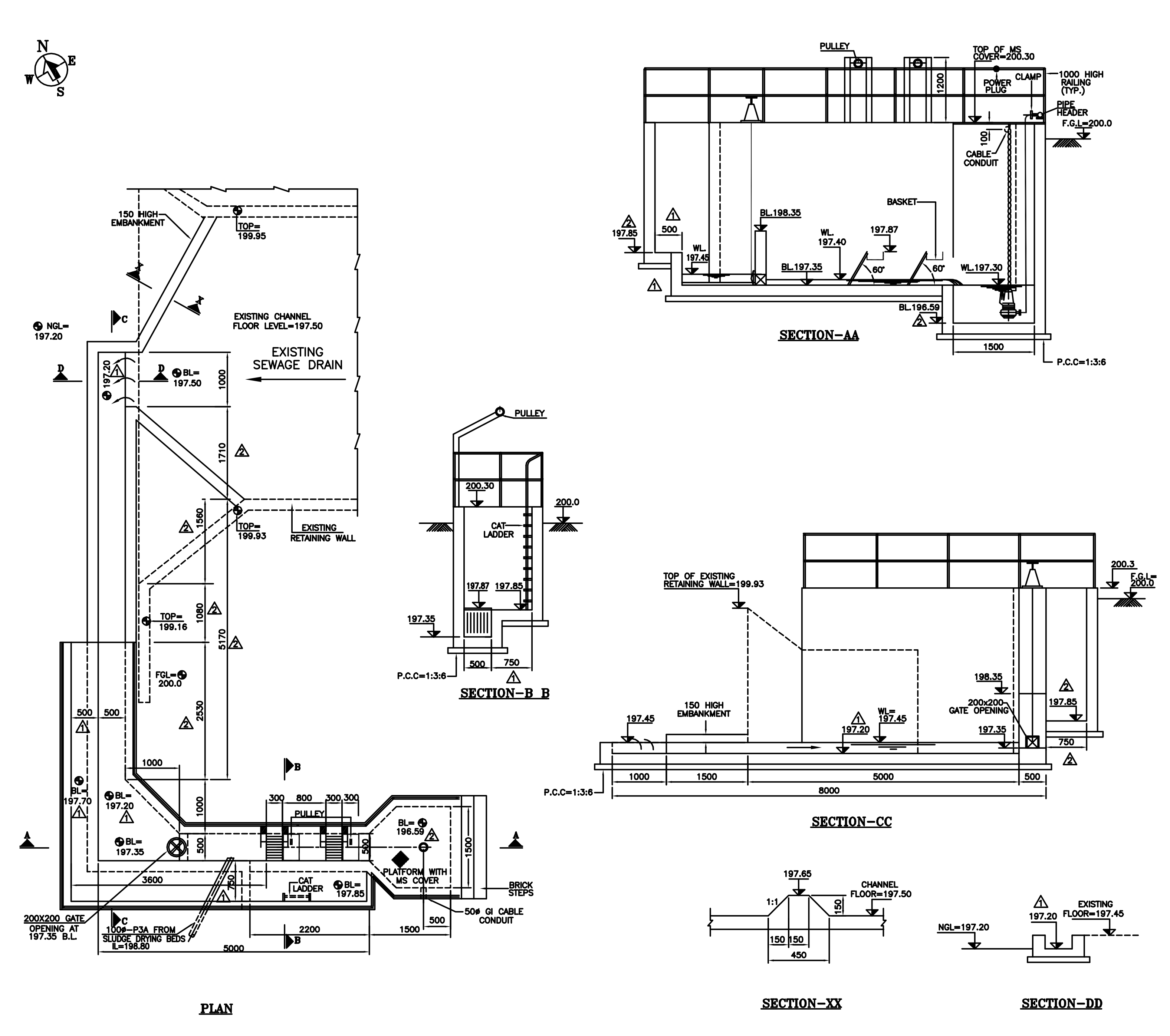
ETUDE SUR L'AMELIORATION DE L'ASSAINISSEMENT DE LA VILLE DE NIAMEY EN REPUBLIQUE DU NIGER

PROJECT: **PILOT PLANT SEWAGE TREATMENT ($100m^3$/day) - NIGER.**

CLIENT: **M/S. TOKYO ENGINEERING.**

TITLE: **SCHEMA P&I AVEC NIVEAUX HYDRAULIQUES**

SCALE	N.T.S	SUPERSEDES DRG. NO. PL/537/P-01 REV-0.
DESIGNED	J.N.P.	
DRAWN	SATISH PATEL	
CHECKED	P.G.A	SUPERSEDED BY DRG NO.
APPROVED	A.G.S	
DATE	2.11.00	
DRAWING NO.	PL/537/P-01	REV. 4



NO.	DATE	REVISION	CHD.	APPD.
0	2.12.00	SUBMITTED FOR ENGG.	PGA	PGA
1	05.01.01	REVISED AS MARKED.	PGA	PGA
2	20.07.01	AS BUILT		

S.NO.	REFERENCE DRAWING	DRAWING NO.
1	LAYOUT	PL/537/L-01
2	P&I WITH HYDRAULIC LEVELS	PL/537/P-01

NOTES:-

1. ALL DIMENSIONS ARE IN MM & LEVELS ARE IN METERS.
2. FOR DETAILS OF SCREEN, S.S BASKET & PULLEY REFER RELEVANT MECHANICAL DRAWINGS.

AS BUILT

ETUDE SUR L'AMELIORATION DE L'ASSAINISSEMENT DE LA VILLE DE NIAMEY EN REPUBLIQUE DU NIGER

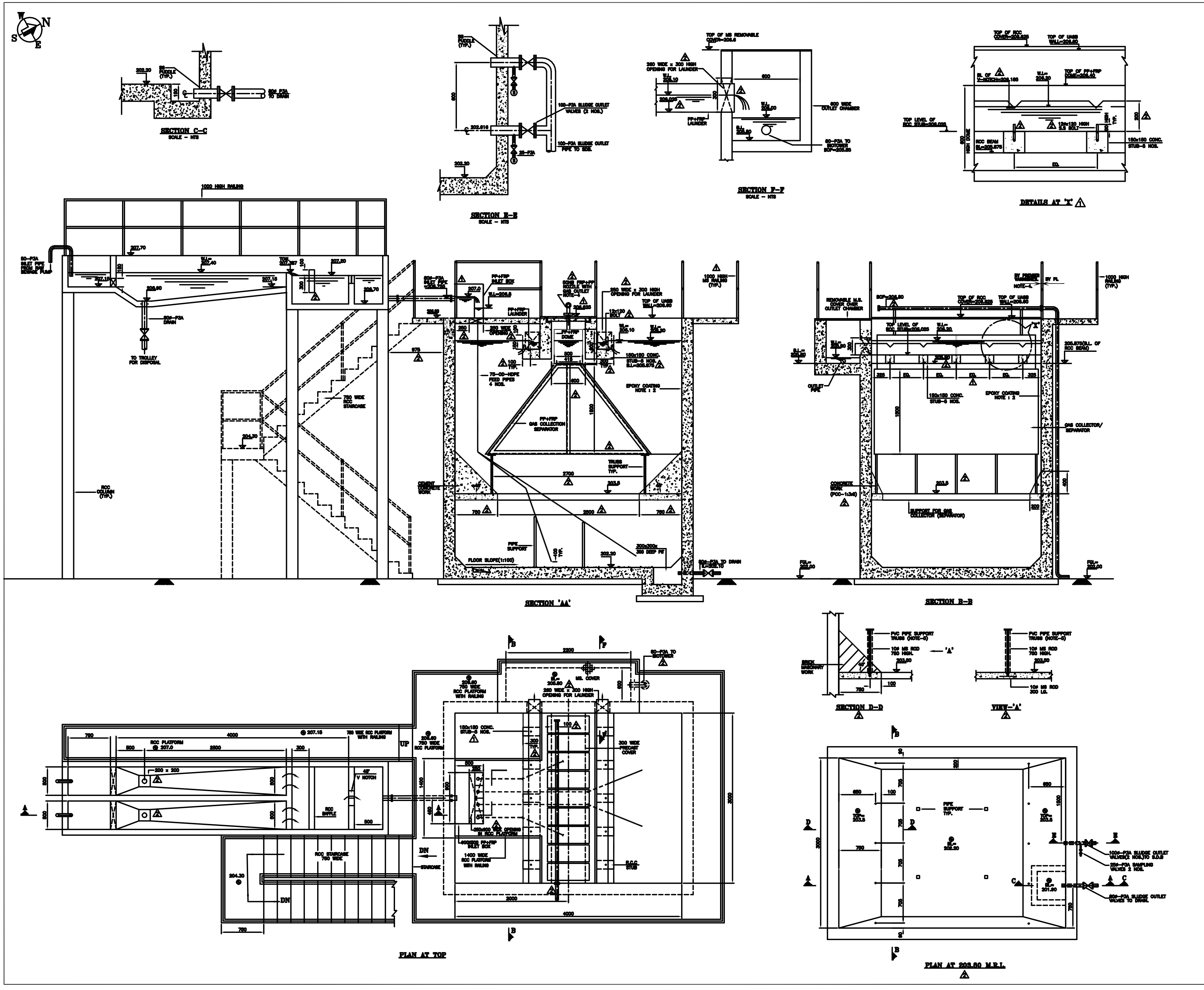
PROJECT: PILOT PLANT FOR SEWAGE TREATMENT ($100m^3$/day) - NIGER

CLIENT: EAM NIAMEY - NIGER. (J.I.C.A. STUDY)

TITLE: PLAN DU CANAL D'ENTREE, CREPINE ET PUIT DE RELEVAGE

SCALE	1:50	SUPERSEDES DRG. NO.
DESIGNED	JNP	
DRAWN	SATISH PATEL	
CHECKED	PGA	SUPERSEDED BY DRG NO.
APPROVED	PGA	
DATE	30.11.00	

DRAWING NO.	REV.
PL/537/GA-01	2



NO.	DATE	REVISION	CHD.	APPD.
0	04.12.00	SUBMITTED FOR ENGINEERING.	PGA	PGA
1	29.12.00	REVISED AS PER VENDOR DETAIL	PGA	PGA
2	09.01.01	REVISED AS PER VENDOR DETAIL	PGA	PGA
3	20.07.01	AS BUILT		

S.NO.	REFERENCE DRAWING	DRAWING NO.
1	LAYOUT	PL/537/L-01
2	P&I WITH HYDRAULIC LEVELS	PL/537/P-01

NOTES:-

1. ALL DIMENSIONS ARE IN MM & LEVELS ARE IN METERS.
2. INSIDE ALL CONCRETE SURFACE WILL BE WITH EPOXY COATING 350 MICRON THICK.
3. FOR SUPPORT DETAIL OF PIPE, DISTRIBUTOR BOX, GAS COLLECTION DOME & SEPARATOR, OUTLET LAUNDER, PL. REFER DRAWING OF M/S. PREMIER VARNISHES.
4. FRP+PP GAS OUTLET WITH TWO NOZZLES & PIPE UPTO REACTOR END SHALL BE SUPPLIED BY M/S. PREMIER VARNISHES.
5. THE PVC PIPE SUPPORT TO BE GROUTED WITH CONCRETE AFTER SLIDING OVER THE MS ROD.

AS BUILT

ETUDE SUR L'AMELIORATION DE L'ASSAINISSEMENT DE LA VILLE DE NIAMEY EN REPUBLIQUE DU NIGER

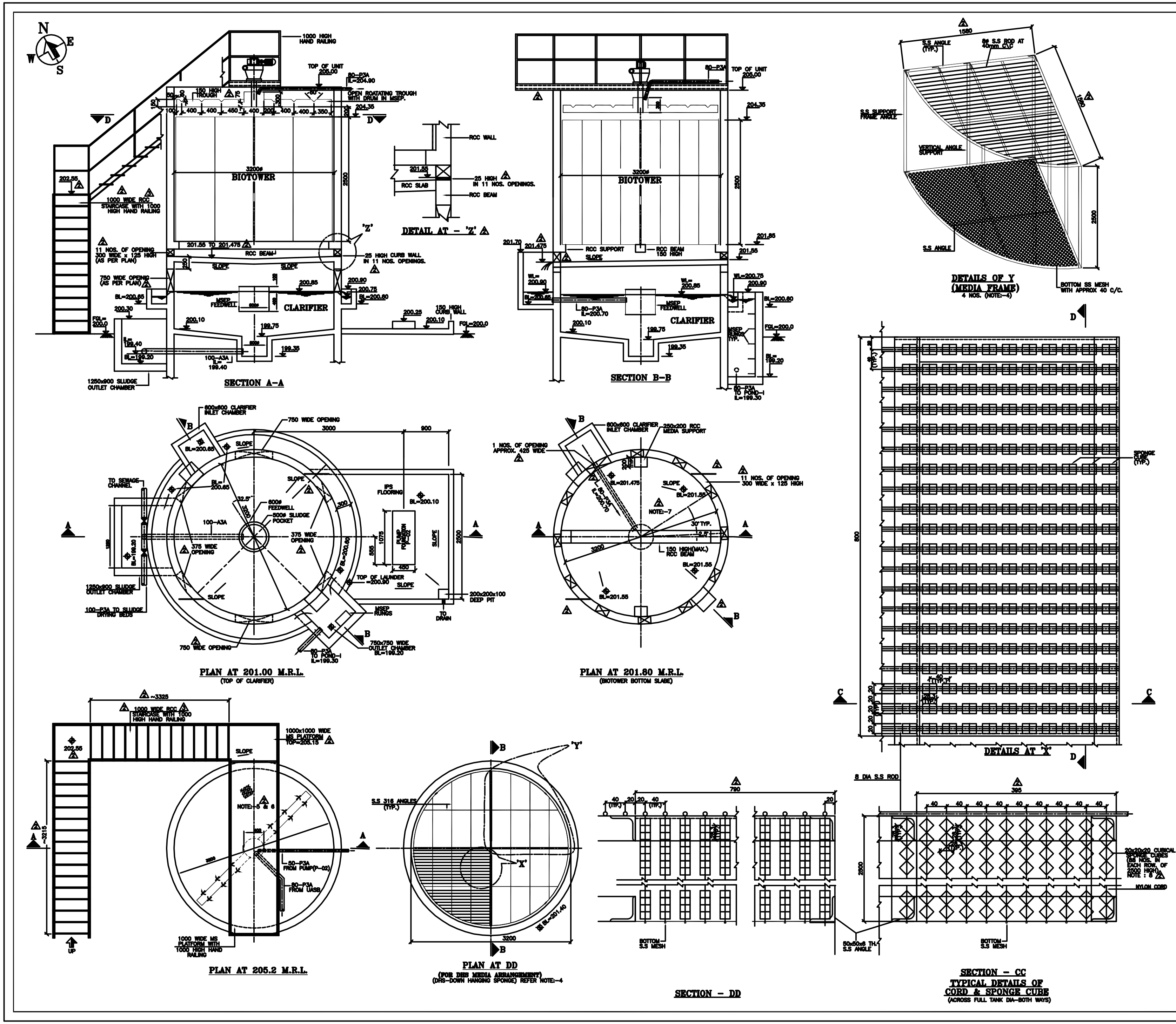
PROJECT: **PILOT PLANT FOR SEWAGE TREATMENT ($100 m^3$/day) - NIGER**

CLIENT: **EAM NIAMEY - NIGER. (J.I.C.A. STUDY)**

TITLE: PLAN DU CANAL DE DESABLAGE ET DU SYSTEME UASB

SCALE	1:30	SUPERSEDES DRG. NO.
DESIGNED	JNP	-
DRAWN	SATISH PATEL	
CHECKED	PGA	SUPERSEDED BY DRG NO.
APPROVED	PGA	-
DATE	4.12.00	

DRAWING NO. **PL/537/GA-02** REV. **3**



NO.	DATE	REVISION	CHD.	APPD.
1	02.01.01	SUBMITTED FOR ENGINEERING.	PGA	PGA
2	17.01.01	SUBMITTED FOR ENGINEERING.	PGA	PGA
3	20.07.01	AS BUILT		

S.NO.	REFERENCE DRAWING	DRAWING NO.
1	P&I DIAGRAM WITH HYDRAULIC LEVELS	PL/537/P-01
2	LAYOUT	PL/537/L-01

NOTES:-

1. ALL DIMENSIONS ARE IN MM & LEVELS ARE IN METERS.
2. DELETED
3. ALL MEMBERS OF DHS FRAME WILL BE IN SS-316 MATERIAL.
4. FOR DETAILS OF MEDIA FRAME PLEASE REFER STRUCTURAL BIOTOWER MEDIA DRAWING NO. PL/528/RCC-03.
5. M.S. BRIDGE SHALL BE SUCH SO AS TO ENABLE TO REMOVE AND REINSTALL THE SAME WHENEVER DHS MEDIA IS TO BE TAKEN FOR MAINTENANCE.
6. ERECTION OF BRIDGE IS TO BE TAKEN UP AFTER INSTALLATION OF MEDIA FRAME.
7. SLOPE OF SLAB AT RL.201.55 IS TO BE PROVIDED TOWARDS CENTRE & TO THE OUTLET.
8. THE TOLERANCES FOR ALL SIDES OF 20 x 20 x 20 SPONGE CUBES SHALL BE ±1.5mm.

AS BUILT

ETUDE SUR L'AMELIORATION DE L'ASSAINISSEMENT DE LA VILLE DE NIAMEY EN REPUBLIQUE DU NIGER

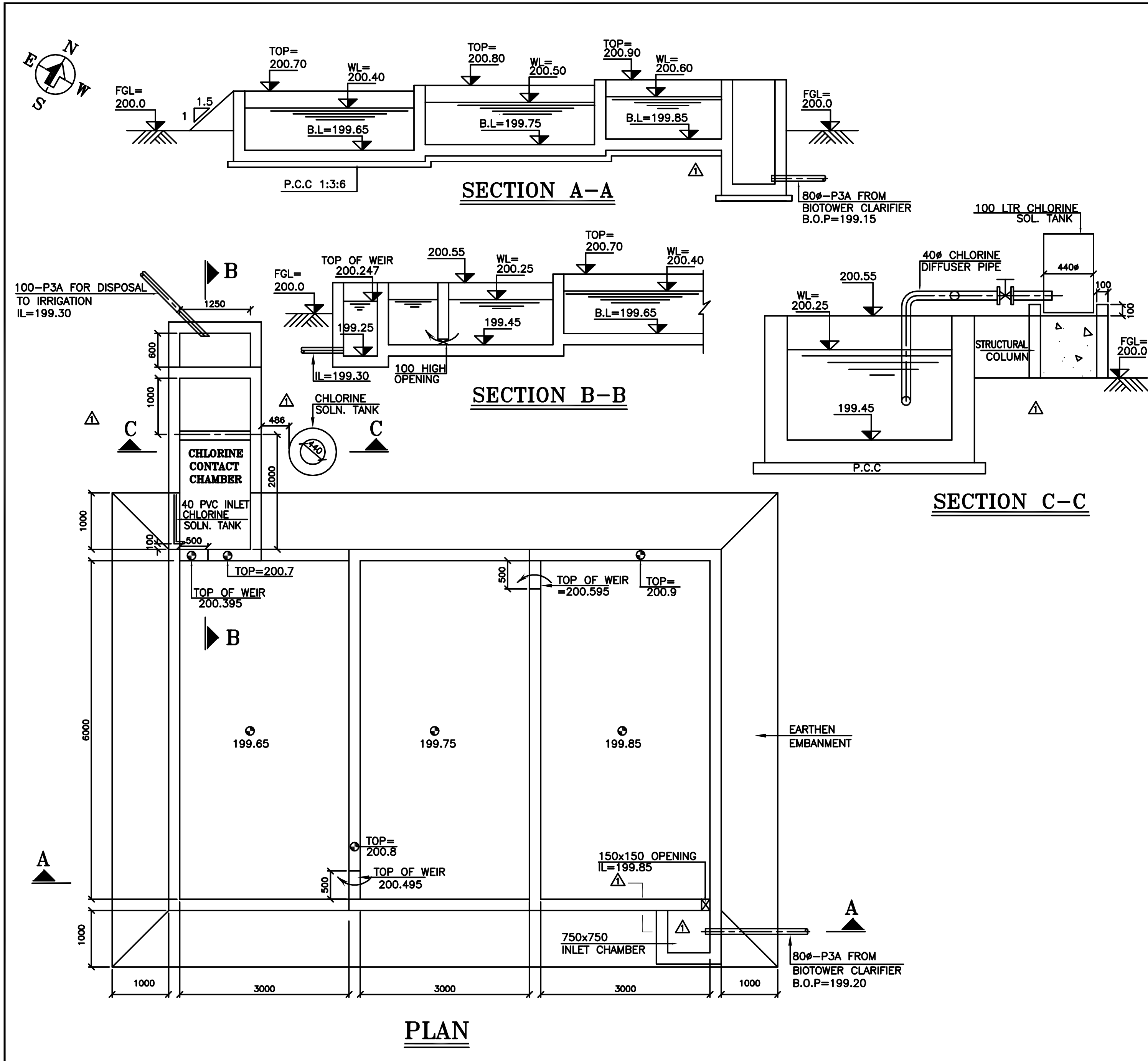
PROJECT: **PILOT PLANT SEWAGE TREATMENT ($100 m^3$/day) - NIGER.**

CLIENT: **EAM NIAMEY - NIGER. (J.I.C.A. STUDY)**

TITLE: DETAILS DU FILTRE BACTERIEN

SCALE	1: 35	SUPERSEDES DRG. NO.
DESIGNED	J.N.P	PL/537/GA-03., REV-0.
DRAWN	SATISH PATEL	
CHECKED	PGA	SUPERSEDED BY DRG NO.
APPROVED	PGA	
DATE	2-12-00	

DRAWING NO. PL/537/GA-03 — REV. 3



NO.	DATE	REVISION	CHD.	APPD.
0	2.12.00	SUBMITTED FOR APPROVAL	P.G.A	P.G.A
1	20.07.01	AS BUILT		

S.NO.	REFERENCE DRAWING	DRAWING NO.
1	LAYOUT	PL/537/L-01
2	P&I WITH HYDRAULIC LEVELS	PL/537/P-01

NOTES:-

1. ALL DIMENSIONS ARE IN MM & LEVELS ARE IN METERS.

AS BUILT

ETUDE SUR L'AMELIORATION DE L'ASSAINISSEMENT DE LA VILLE DE NIAMEY EN REPUBLIQUE DU NIGER

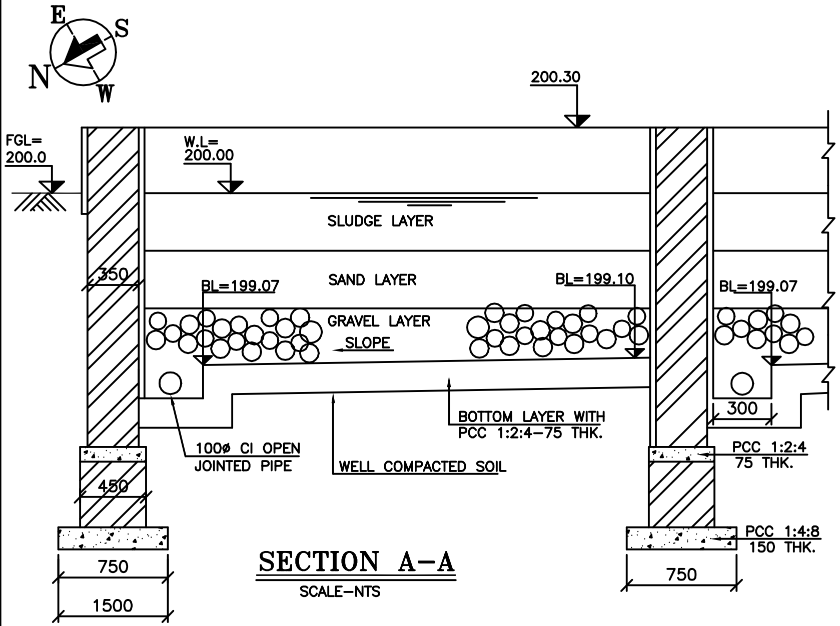
PROJECT: **PILOT PLANT SEWAGE TREATMENT ($100 m^3/day$) - NIGER.**

CLIENT: **M/S. NIAMEY - NIGER. (J.I.C.A. STUDY)**

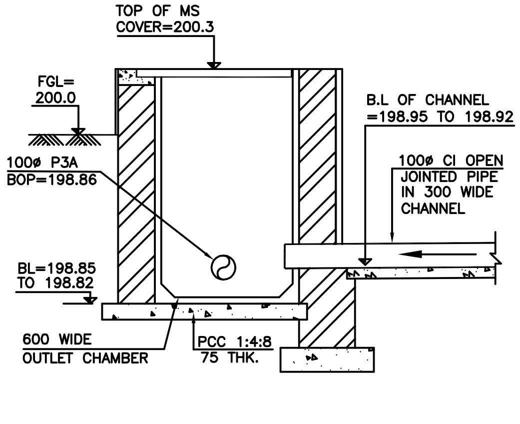
TITLE: DETAILS DU BASSIN-I, II ET III & CHAMBRE DE CHLORE

SCALE	1=75	SUPERSEDES DRG. NO.
DESIGNED	J.N.P	
DRAWN	SATISH PATEL	
CHECKED	P.G.A	SUPERSEDED BY DRG NO.
APPROVED	P.G.A	
DATE	07.11.00	

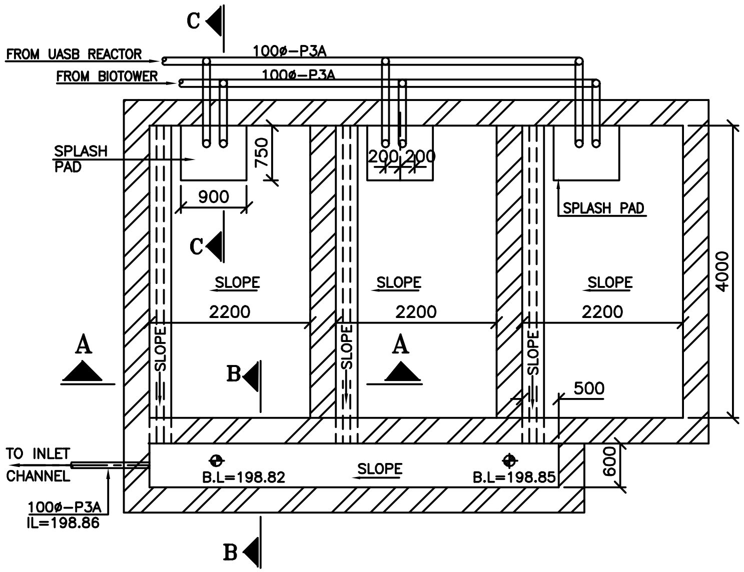
DRAWING NO.	REV.
PL/537/GA-04	1



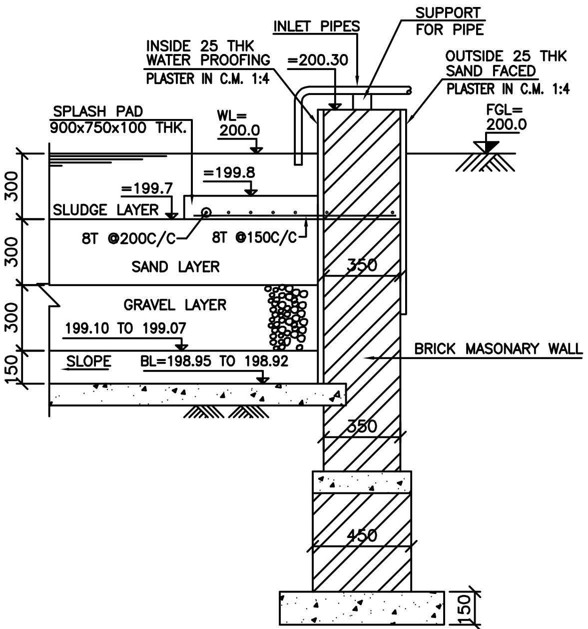
SECTION A–A
SCALE–NTS



SECTION B–B
SCALE–NTS



PLAN



SECTION C–C
SCALE–1:25

NO.	DATE	REVISION	CHD.	APPD.
0	02.11.00	SUBMITTED FOR APPROVAL		
1	28.07.01	AS BUILT		

S.NO.	REFERENCE DRAWING	DRAWING NO.
1	LAYOUT	PL/537/L–01
2	P&I WITH HYDRAULIC LEVELS	PL/537/P–01

NOTES:–

1. ALL DIMENSIONS ARE IN MM & LEVELS ARE IN METERS.
2. MEDIA DETAIL

SAND
EFFECTIVE SIZE=0.5 TO 0.75 mm.
UNIFORMITY COEFFICENT = NOT MORE THAN 3.0

GRAVEL
SIZE=25 TO 50 mm.
GRADED BIGGER TO SMALLER FROM BOTTOM TO TOP

AS BUILT

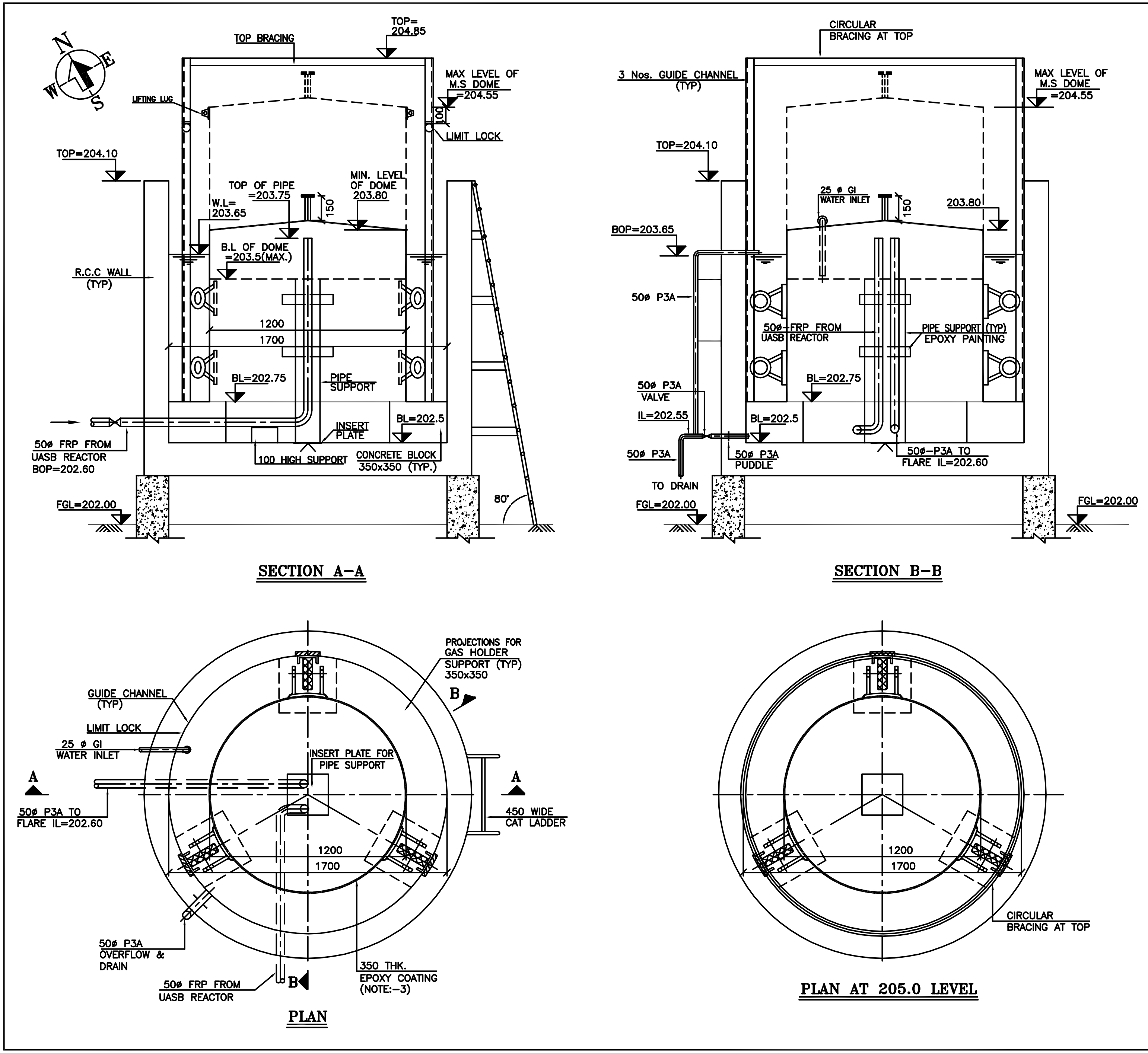
ETUDE SUR L'AMELIORATION DE L'ASSAINISSEMENT DE LA VILLE DE NIAMEY EN REPUBLIQUE DU NIGER

PROJECT: PILOT PLANT SEWAGE TREATMENT ($100m^3/day$) – NIGER.

CLIENT: M/S. NIAMEY – NIGER. (J.I.C.A. STUDY)

TITLE: DETAILS DES LITS DE SECHAGE DE BOUES

SCALE	1=75	SUPERSEDES DRG. NO.
DESIGNED	J.N.P.	
DRAWN	SATISH PATEL	
CHECKED		SUPERSEDED BY DRG NO.
APPROVED		
DATE	1.11.00	
DRAWING NO.	PL/537/GA–05	REV. 1



NO.	DATE	REVISION	CHD.	APPD.
1	29.12.00	SUBMITTED FOR INFORMATION	P.G.A	P.G.A
2	20.07.01	AS BUILT		

S.NO.	REFERENCE DRAWING	DRAWING NO.
1	P & I DIAGRAM	PL/537/P-01
2	LAYOUT	PL/537/L-01

NOTES:-

1. ALL DIMENSIONS ARE IN MM & LEVELS ARE IN METERS.
2. BIOGAS PRESURE IN GAS HOLDER IS 250-300mm WATER COLUMN
3. M.S GAS HOLDER SHALL BE PROVIDED WITH 350 THK. EPOXY PAINTING ON ITS INSIDE AND OUTSIDE SURFACE.
4. PIPING ORIENTATION SHALL BE AS PER OVER ALL INTERCONNECTING PIPING LAYOUT DRG NO. PL/528/MP-01.

AS BUILT

ETUDE SUR L'AMELIORATION DE L'ASSAINISSEMENT DE LA VILLE DE NIAMEY EN REPUBLIQUE DU NIGER

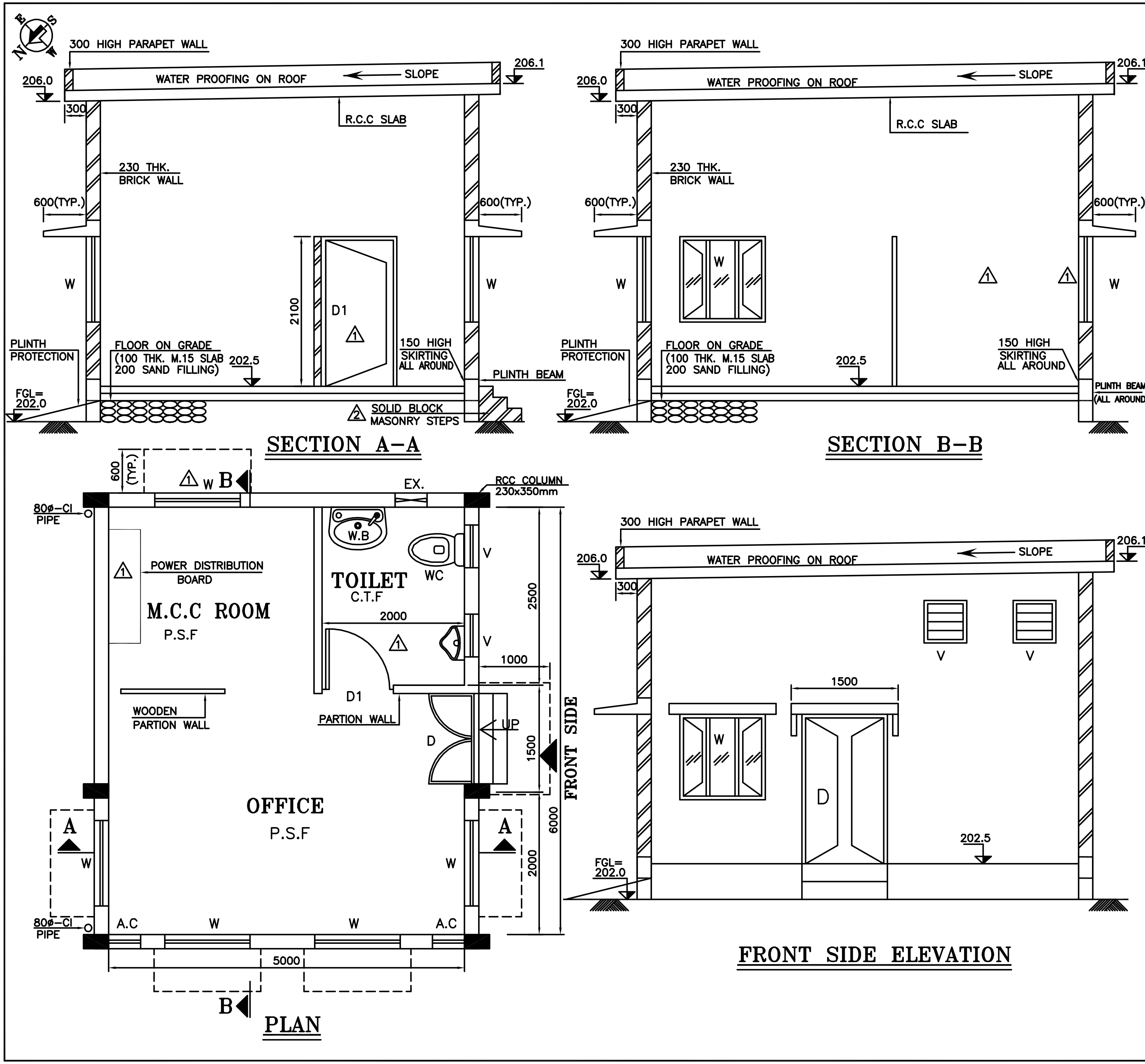
PROJECT: **PILOT PLANT SEWAGE TREATMENT ($100m^3$/day) - NIGER.**

CLIENT: **M/S. NIAMEY - NIGER. (J.I.C.A. STUDY)**

TITLE: DETAILS DU GOZOMETRE

SCALE	1 : 25	SUPERSEDES DRG. NO.
DESIGNED	M.A.BADRI	PL/537/GA-06,REV-0.
DRAWN	L.S.RABARI	
CHECKED	P.G.A	SUPERSEDED BY DRG NO.
APPROVED	P.G.A	
DATE	11-11-00	

DRAWING NO. **PL/537/GA-06** REV. 2



NO.	DATE	REVISION	CHD.	APPD.
0	4-11-00	SUBMITTED FOR INFORMATION	PGA	PGA
1	05.01.01	REVISED AS MARKED	PGA	PGA
2	20.07.01	AS BUILT		

S.NO.	REFERENCE DRAWING	DRAWING NO.
1	LAYOUT	PL/537/L-01
2	P&I WITH HYDRAULIC LEVELS	PL/537/P-01

NOTES:-

1. ALL DIMENSIONS ARE IN MM & LEVELS ARE IN METERS.

PAINTING:-

OUTSIDE – WATER PROOF PAINT
INSIDE – WHITE WASH

PLASTER:-

OUTSIDE – 20mm THK. SAND FACE
INSIDE – 15mm THK.
CEILING – 6mm THK.

FLOORING:-

PSF – POLISHED STONE FLOORING
CTF – CERAMIC TILES FLOORING

SCHEDULE OF OPENINGS

TYPE	DESCRIPTION	Nos.	SIZE
D	FULLY PANELLED DOOR WITH T/W FRAME (DOUBLE SHUTTER)	1	1200x2100
D1	M.S SINGLE SHUTTER DOOR	1	750x2100
W	STEEL GLASS WINDOW OPENABLE FROM INSIDE	5	1200x1200
V	STEEL VENTILATORS WITH FIXED GLASS	2	600x600
EX.	EXHAUST FAN	1	450ø
AC	AIR CONDITIONING 1.5 T	2	STD.

AS BUILT

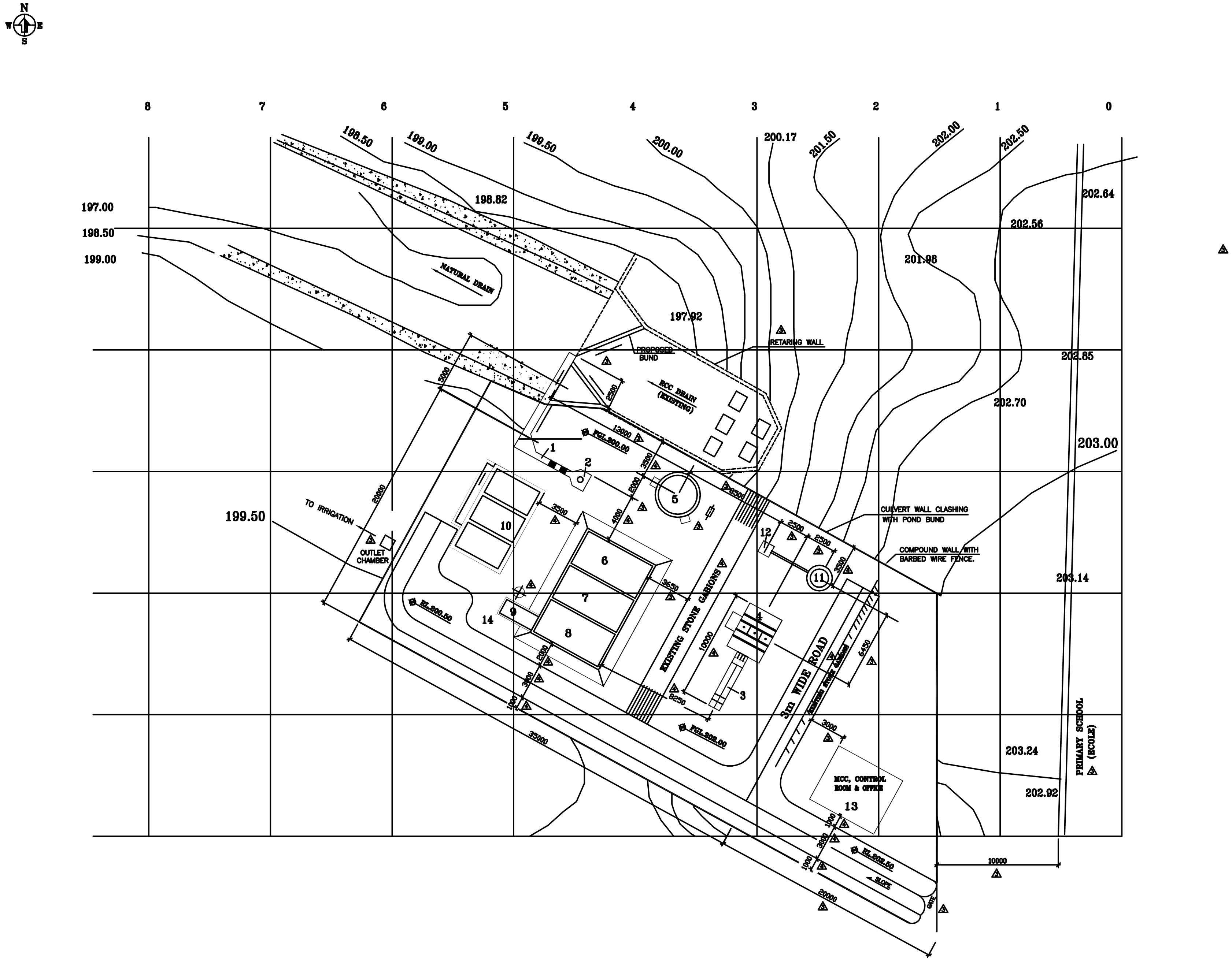
ETUDE SUR L'AMELIORATION DE L'ASSAINISSEMENT DE LA VILLE DE NIAMEY EN REPUBLIQUE DU NIGER

PROJECT: PILOT PLANT SEWAGE TREATMENT ($100m^3$/day) – NIGER.

CLIENT: EAM NIAMEY – NIGER. (J.I.C.A. STUDY)

TITLE: DETAILS DU BUREAU ET DE LA SALLE MCC

SCALE	1:50	SUPERSEDES DRG. NO. –
DESIGNED	M.A.B	
DRAWN	L.S.RABARI	
CHECKED	PGA	SUPERSEDED BY DRG NO. –
APPROVED	PGA	
DATE	4-11-00	
DRAWING NO.	PL/537/GA-07	REV. 2



No.	DATE	REVISION	CHD.	APPD.
0	01.11.00	SUBMITTED FOR INFORMATION & APPROVAL	A.G.S	R.V.K
1	08.11.00	CLIENT'S COMMENTS INCORPORATED.	A.G.S	R.V.K
2	18.11.00	ISSUED FOR APPROVAL	Y.S.T	A.G.S
3	13.12.00	REVISED AS PER TEC APPROCAL ON 7.12.00	P.G.A	P.G.A
4	25.07.01	AS BUILT		

S.NO.	REFERENCE DRAWING	DRAWING No.
1	P & I DIAGRAM	PL/537/P-01

NOTES:-

1. ALL DIMENSIONS ARE IN MM & LEVELS ARE IN METERS.

LEGEND:-

EXISTING STRUCTURES

PROPOSED STRUCTURES

SR. No.	DESCRIPTION	QTY.	SIZE
1	INLET CHANNEL & SCREENS	1	5.0 m X 0.5 m
2	PUMP PIT	1	1.5 m X 1.5 m
3	GRIT CHANNEL	2	0.5 m X 4.0 m
4	UASB REACTOR	1	4.0 m X 3.0 m
5	BIOTOWER	1	3.20 m ø
6	POND-1	1	6.0 m X 3.0 m (AVG. SIZE)
7	POND-2	1	6.0 m X 3.0 m (AVG. SIZE)
8	POND-3	1	6.0 m X 3.0 m (AVG. SIZE)
9	CHLORINATION CHAMBER	1	3.0 m X 1.5 m
10	SLUDGE DRYING BED	3	4.00 m X 2.20 m
11	GAS HOLDER	1	1.2 m ø
12	FLARE STACK	1	1.5 m X 1.5m
13	MCC & CONTROL ROOM	1	6.0 m X 5.0m
14	CHLORINE SOLN.TANK	1	–

AS BUILT

ETUDE SUR L'AMELIORATION DE L'ASSAINISSEMENT DE LA VILLE DE NIAMEY EN REPUBLIQUE DU NIGER

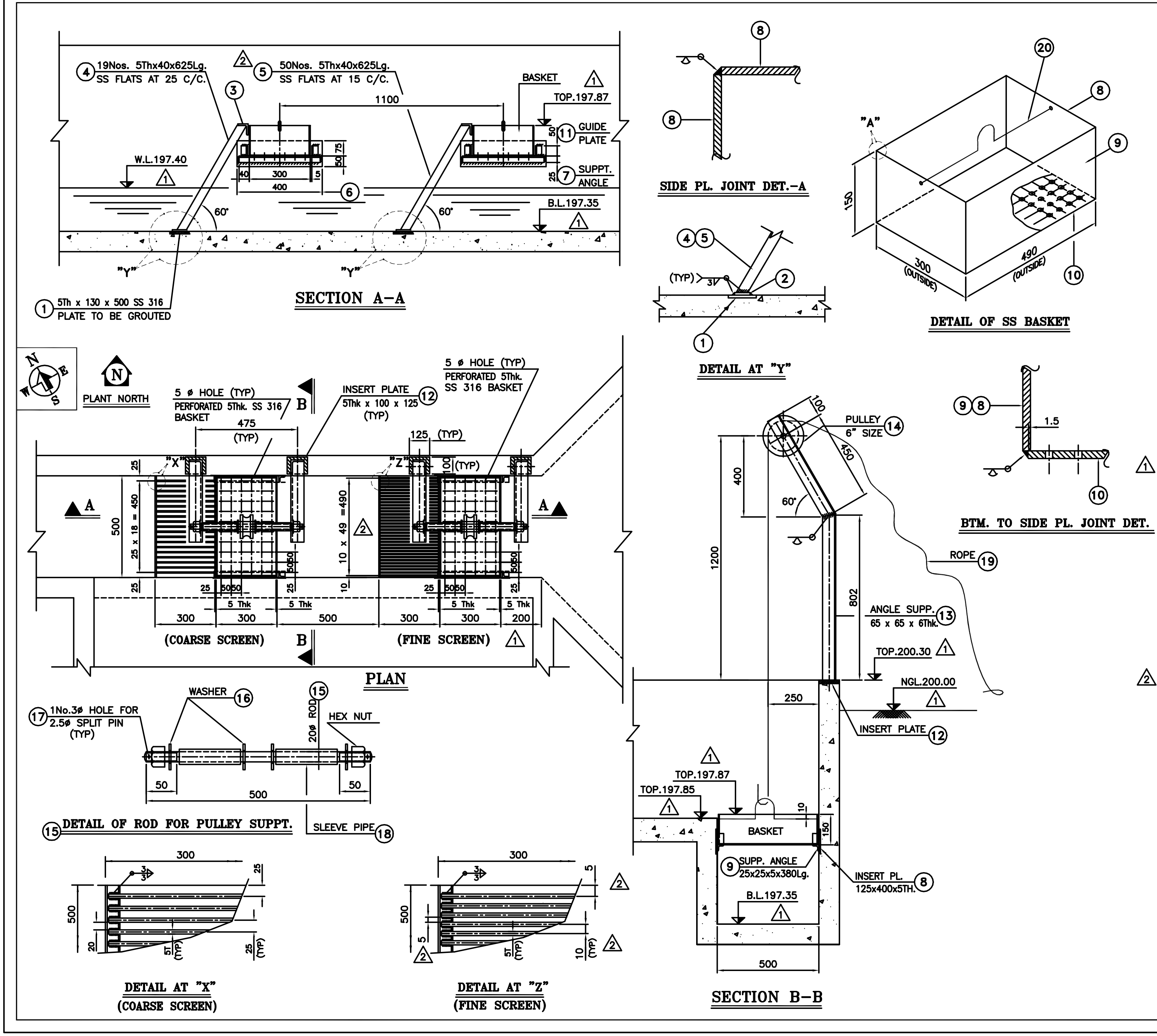
PROJECT: **PILOT PLANT FOR SEWAGE TREATMENT ($100m^3$/day) – NIGER**

CLIENT: **M/S. TOKYO ENGINEERING.**

TITLE: PLAN DE DISPOSITION DE LA STATION

SCALE	1:300	SUPERSEDES DRG. NO.
DESIGNED	Y.S.T	PL/537/L-01 (Rev.1)
DRAWN	Kaushik	
CHECKED	Y.S.T	SUPERSEDED BY DRG NO.
APPROVED	A.G.S	
DATE	18.11.00	

DRAWING NO. **PL/537/L-01** REV. 4



No.	DATE	REVISION	CHD.	APPD.
0	04/11/2000	SUBMITTED FOR INFORMATION.	N.H.P.	A.M.P.
1	01/12/2000	REVISED AS MARKED.	K.J.D.	A.M.P.
2	30/12/2000	REVISED AS PER PROCESS IOM DT.30/12/01	A.M.P.	A.G.S.
3	28/07/2001	SHOWN AS BUILT	A.M.P.	A.G.S.

S.NO.	REFERENCE DRAWING	DRAWING No.
1	P & I DIAGRAM	PL/537/P-01
2	G.A. DRAWING FOR INLET CHANNEL, SCREEN AND PUMP PIT.	PL/537/GA-01

NOTES:-

1. ALL DIMENSIONS ARE IN MM & LEVELS ARE IN METERS.
2. 2Nos. SS 316 FORK SCRAPERS TO BE SUPPLIED WITH THE BAR SCREEN.
3. ALL CS STRUCTURAL PARTS SHALL BE SAND BLASTED TO SA 2½ SWIDISH STANDARD & PAINTED WITH 2 COAT OF EPOXY PAINTS BEFORE EXPORT TO NIGER.

AS BUILT

QTY.SHOWN FOR 2 BASKET

SR. No.	DESCRIPTION	SIZE	QTY.	MATL.	RMRK.
20	HANDLE	10ø x 650Lg.	2	SS 316	
19	ROPE	10ø x 5.6 M.Lg.	2	NYLON	
18	SLEEVE PIPE	25 NB x ~180Lg.	4	IS 1239	(HVY)
17	SPLIT PIN	2.5 ø	4	STD.	
16	WASHER	3Thk.	8	GI	
15	ROD FOR PULLEY WITH 2 HEXNUT	20 ø AS PER DET.	2	IS 2062	
14	GROOVED PULLEY	6" ø	2	IS 2062/CI	
13	ANGLE SUPPT.	65x65x6THx1360Lg.	4	IS 2062	
12	INS. PL. FOR PULLEY SUPPT.	5TH x100 x125	4	IS 2062	
11	GUIDE ANGLE	25x25x5THx50Lg.	8	SS 316	
10	BASKET BTM. PARFORATED PL.	5TH x490 x300	2	SS 316	
9	SIDE PLATE FOR BASKET	5TH x490 x150	4	SS 316	
8	SIDE PLATE FOR BASKET	5TH x300 x150	4	SS 316	
7	SUPPT. ANGLE FOR BASKET	25x25x5THx380Lg.	4	SS 316	
6	INSERT PL. FOR BASKET SUPPT.	5TH x400 x125	4	SS 316	
5	FLAT BAR FOR FINE SCREEN	5TH x40 x625Lg.	50	SS 316	
4	FLAT BAR FOR COARSE SCREEN	5TH x40 x625Lg.	19	SS 316	
3	TOP ANGLE SUPPT.	50x50x5thx500Lg.	2	SS 316	
2	BTM. FLAT BAR	5TH x100 x500	2	SS 316	
1	INSERT PLATE	5TH x130 x500	2	SS 316	

BILL OF MATERIAL

ETUDE SUR L'AMELIORATION DE L'ASSAINISSEMENT DE LA VILLE DE NIAMEY EN REPUBLIQUE DU NIGER

PROJECT: **PILOT PLANT FOR SEWAGE TREATMENT ($100m^3$/day) - NIGER**

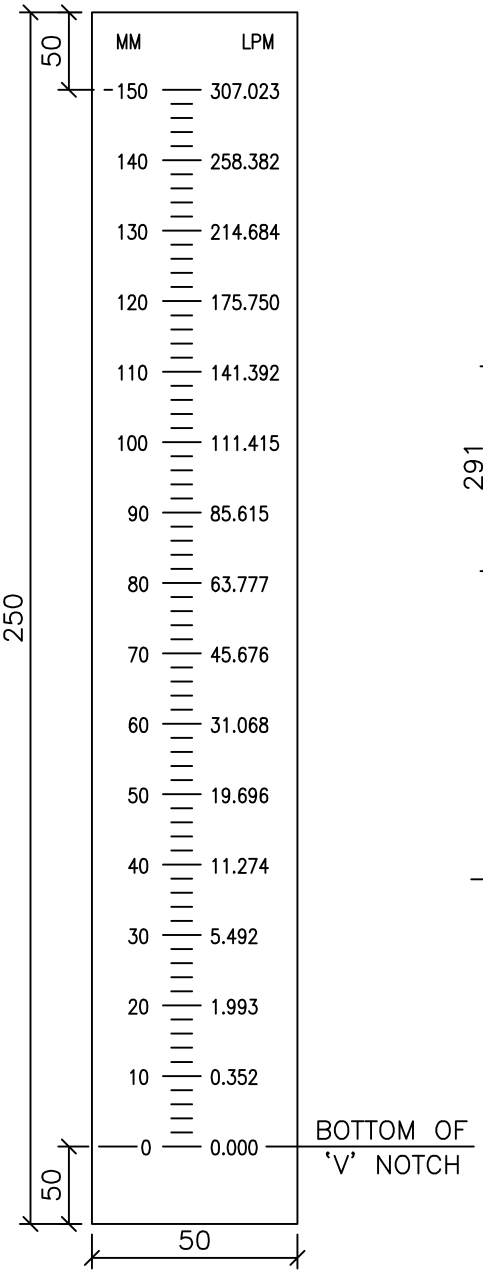
CLIENT: **M/S. TOKYO ENGINEERING.**

TITLE: DETAILS MECANIQUE DES DEGRILLAGES GROSSIERS ET FINS CREPINE AVEC SYSTEME DE RELEVAGE

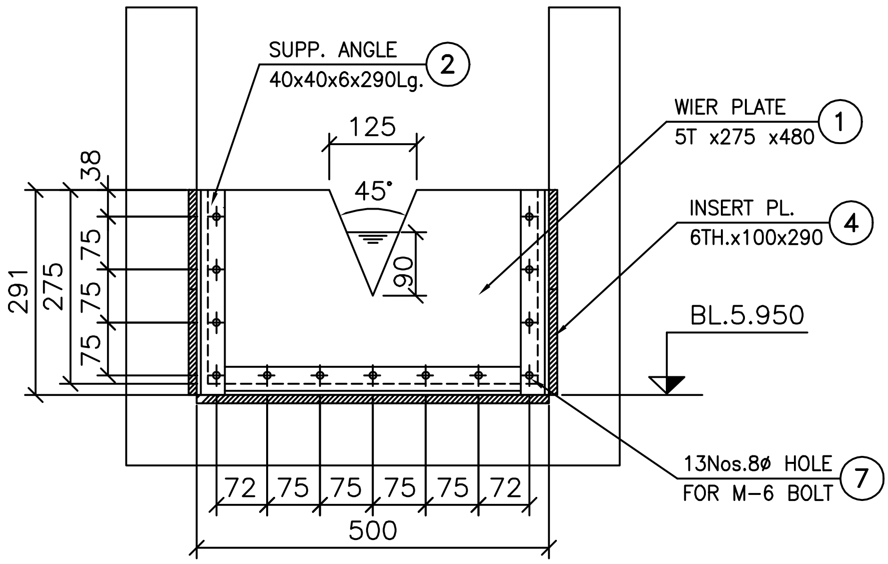
SCALE	1:25	SUPERSEDES DRG. NO.
DESIGNED	K.J.D	
DRAWN	N.D.RAVAL	
CHECKED	K.J.D	SUPERSEDED BY DRG NO.
APPROVED	A.M.P.	
DATE	01/11/00	
DRAWING NO.	PL/528/ME-01	REV. 3

BILL OF MATERIAL

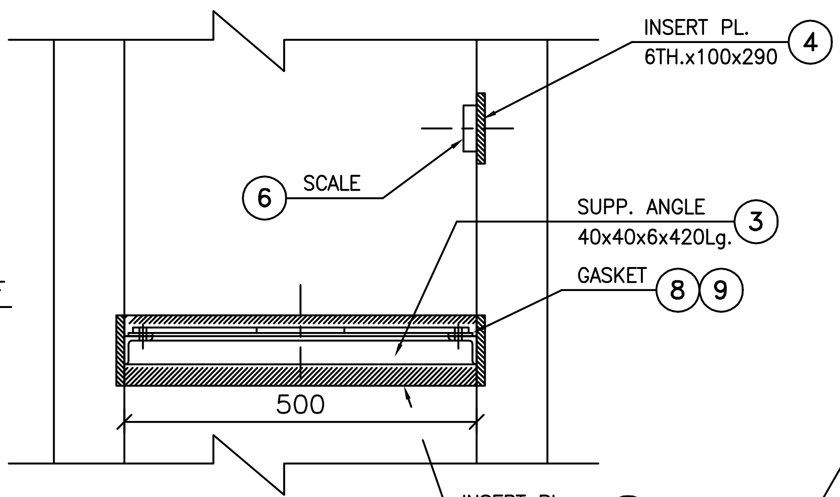
SR. No.	DESCRIPTION	SIZE	QTY.	MATL.	RMRK.
1	WIER PLATE	5Thk x275 x480	1	SS 316	
2	SUPP. ANGLE	40 x40 x6T x290Lg.	2	IS 2062	
3	SUPP. ANGLE	40 x40 x6T x420Lg.	1	IS 2062	
4	INSERT PL.	6TH x100 x290	3	IS 2062	
5	BOTTOM INSERT PL.	6TH x100 x500	1	IS 2062	
6	SCALE	5TH x50 x275	1	SS 316	
7	NUT WITH BOLT	M-6 x25Lg.	13	IS 1367	
8	GASKET	3TH x35 x300	2	RUBBER	
9	GASKET	3TH x35 x500	1	RUBBER	



SCALE 1



ELEVATION



PLAN

2 AS BUILT

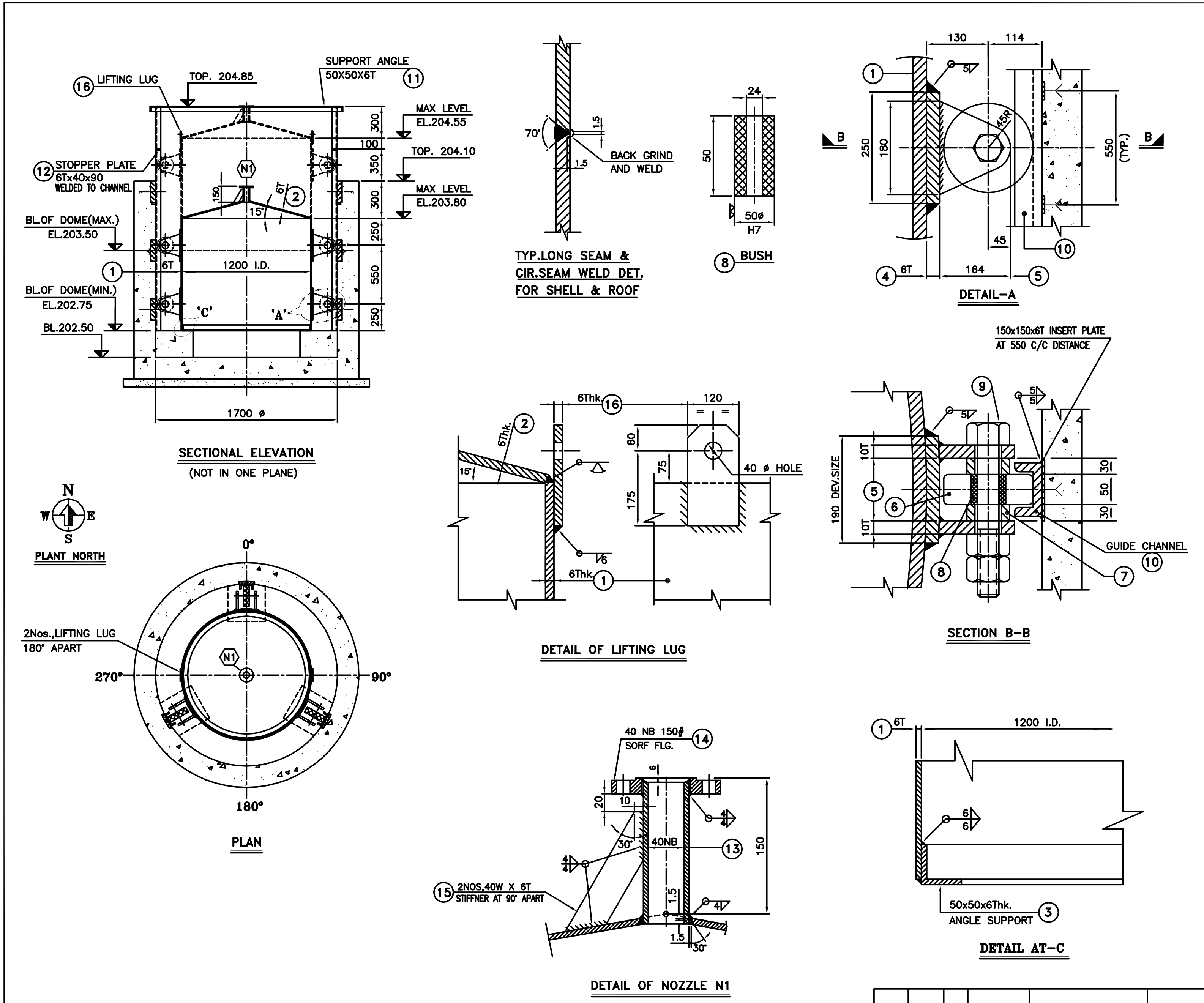
ETUDE SUR L'AMELIORATION DE L'ASSAINISSEMENT DE LA VILLE DE NIAMEY EN REPUBLIQUE DU NIGER

proj. PILOT PLANT SEWAGE TREATMENT

Client M/s. TOKYO ENGINEERING

TITLE: DETAILS DU SEUIL DE MESURE DE DEBIT

SCALE	NTS	DATE	29/11/00
DRN.	N.D.RAVAL	DESIGN	K.J.D
CHKD	KJD	APPD.	AGS
DRG.No.	PL/528/ME-02	REV.	2



No.	DATE	REVISION	CHD.	APPD.
0	11/11/00	SUBMITTED FOR INFORMATION.	KJD	AMP
1	29/11/00	ISSUED FOR FABRICATION.	KJD	AMP
2	05/01/01	HOLD REMOVED	KJD	YST
3	28/07/01	SHOWN AS BUILT	KJD	AMP

S.NO.	REFERENCE DRAWING	DRAWING No.
1	P & I DIAGRAM	PL/537/P-01
2	G.A. DETAILS OF GAS HOLDER	PL/537/GA-07

NOTES:-

1. ALL DIMENSIONS ARE IN mm. AND LEVELS ARE IN METER UNLESS OTHERWISE SPECIFIED.
2. ALL INSIDE SURFACES SHALL BE THROUGHLY DRIED & CLEANED AFTER HYDROTEST BEFORE DESPATCH.
3. ALL SHARP EDGES TO BE ROUNDED OFF
4. ALL EXPOSED MACHINE SURFACE SHALL BE PROTECTED WITH RUST PREVENTIVE COMPOUND & TALE TELL HOLE SHALL BE PLUGGED WITH HARD GREASE.
5. ALL FLANGE SHALL HAVE CONCENTRIC SEPRATION.
6. WEIGHT:-

EMPTY WT.	~400 KGS.

7. PAINTING:-

SR. No.	DESCRIPTION	EXTERNAL & INTERNAL
1	SURFACE PREPARATION	SAND BLASTING TO SA 2½
2	PRIMER	TWO COATS OF EPOXY ZINC PHOSPHATE PRIMER DFT-35 MICRON / COAT
3	FINISH COAT	TWO COATS OF EPOXY HIGH BUILD FINISH PAINT DFT-100 MICRON / COAT
4	SURFACE AREA	5.6 SQ.MTR.(APPX.) (INTERNAL) 5.8 SQ.MTR.(APPX.) (EXTERNAL)

AS BUILT 3

SR. No.	DESCRIPTION	SIZE	QTY.	MATL.	RMRK.
16	PLATE FOR LIFTING LUG	6Tx235x120	2	IS:2062 GR A	
15	STIFFNER FOR N1	6Tx40Wx~180	2	IS:2062 GR A	
14	FLANGE FOR N1	40NB,150# SORF	1	IS:2062 GR A	
13	PIPE FOR N1	40NB,HVYx160 LG.	1	IS:1239	
12	STOPPER PLATE	6T x 40 x 90	3	IS:2062 GR A	
11	SUPPORT ANGLE	50x50x6Tx5500 DEV.	1	IS:2062 GR A	
10	GUIDE CHANNEL	ISMC100x2100 LG.	3	IS:2062 GR A	
9	BOLT WITH HEX NUT AND LOCK NUT	M-24 x 190 LG.	6	IS:1367	
8	BUSH	50ø/24øx50 LG.	6	G.M.	
7	SPACER	30Tx80/25ø	12	M.S.	
6	GUIDE WHEEL	50Tx200ø/50ø	6	C.I.	
5	GUIDE PLATE	10TxAS PER DET.	12	IS:2062 GR A	
4	PAD PLATE	6Tx250x190	6	IS:2062 GR A	
3	BOTTOM ANGLE	50x50x6Tx3790 DEV.	1	IS:2062 GR A	
2	ROOF PLATE	6TxAS PER DEV.	1	IS:2062 GR A	
1	SHELL PLATE	6Tx1050x3790 DEV.	1	IS:2062 GR A	

BILL OF MATERIAL FOR ONE UNIT (QTY REQD.:-1No.)

NOZZ MARK	SIZE	QTY.	FLANGES	SERVICE	REMARK
N1	40NB	1	ANSI B.16.5 150# SORF	FLAME ARRESTOR	FA-01

NOZZLE SCHEDULE

ETUDE SUR L'AMELIORATION DE L'ASSAINISSEMENT DE LA VILLE DE NIAMEY EN REPUBLIQUE DU NIGER

PROJECT: **PILOT PLANT FOR SEWAGE TREATMENT ($100m^3/day$) - NIGER**

CLIENT: **M/S. TOKYO ENGINEERING.**

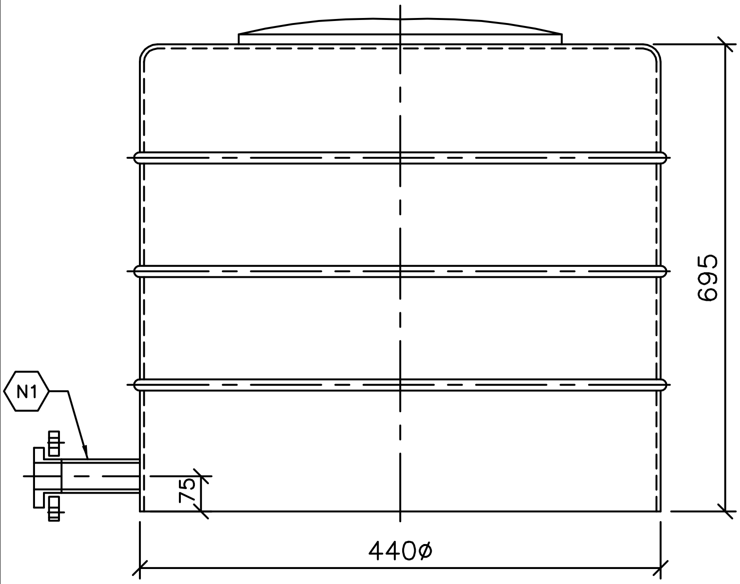
TITLE: DETAILS MECANIQUE DU GOZOMETRE

SCALE	1:25	SUPERSEDES DRG. NO. PL/528/ME-03 (REV.0)
DESIGNED	N.H.P	
DRAWN	N.D.RAVAL	
CHECKED	K.J.D	SUPERSEDED BY DRG NO.
APPROVED	A.M.P	
DATE	10/11/00	

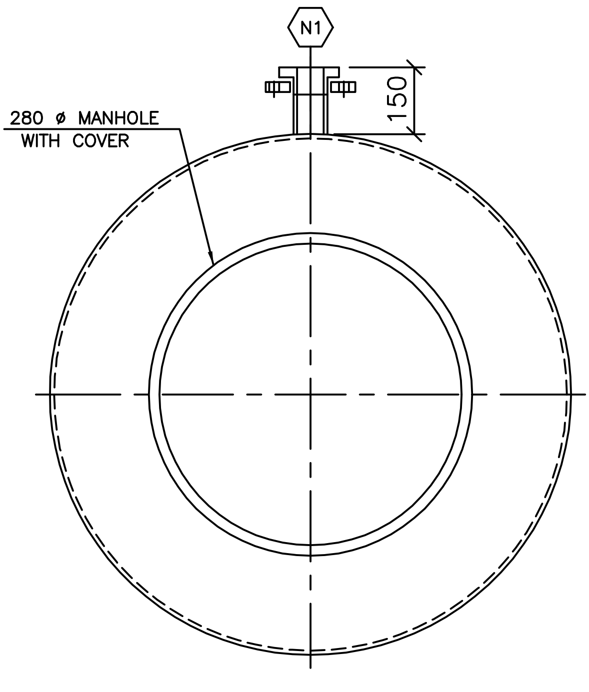
DRAWING NO. **PL/528/ME-03** REV. 3

BILL OF MATERIAL

SR. No.	DESCRIPTION	SIZE	QTY.	MATL.	RMRK.
1	PIPE FOR N1	50 O/Dx10 Kg./CM^2	1	HDPE	
2	PIPE END FOR N1	50 O/D	1	HDPE	
3	FLANGE FOR N1	40 NBxLJFFx150#	1	IS 2062	



ELEVATION



ORIENTATION PLAN

NOTES:-

1) THICKENESS TO BE SUGGESTED BY VENDOR
2) DRILLING ON FLANGES SHALL BE AS PER ANSI B16.5

QTY. 1No.

MOC :- HDPE

CAPACITY :- 100 LTR.

CENTRAL AGITATION :- FRP ROD.(20øx1000Lg.)

CODE No.:- HD-10.01

AS BUILT 2

NOZZLE SCHEDULE

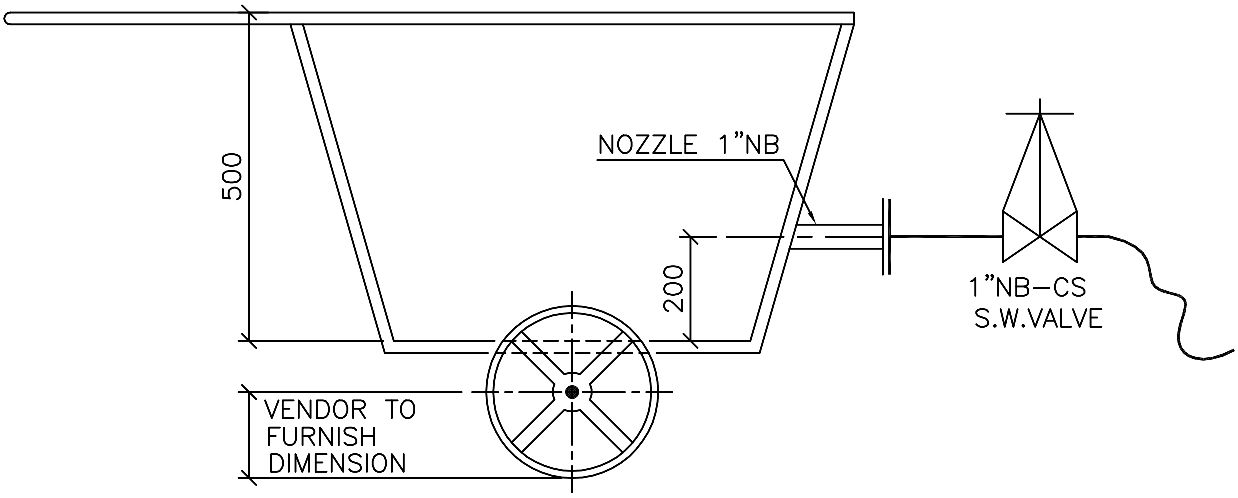
NOZZ MARK	NO. OFF	PIPE SIZE	FLANGE	SERVICE
N1	1	40 NB	ANSI B 16.5 150 # SOFF	OUTLET

SUPERSEDES PL/528/ME-06, REV. 0

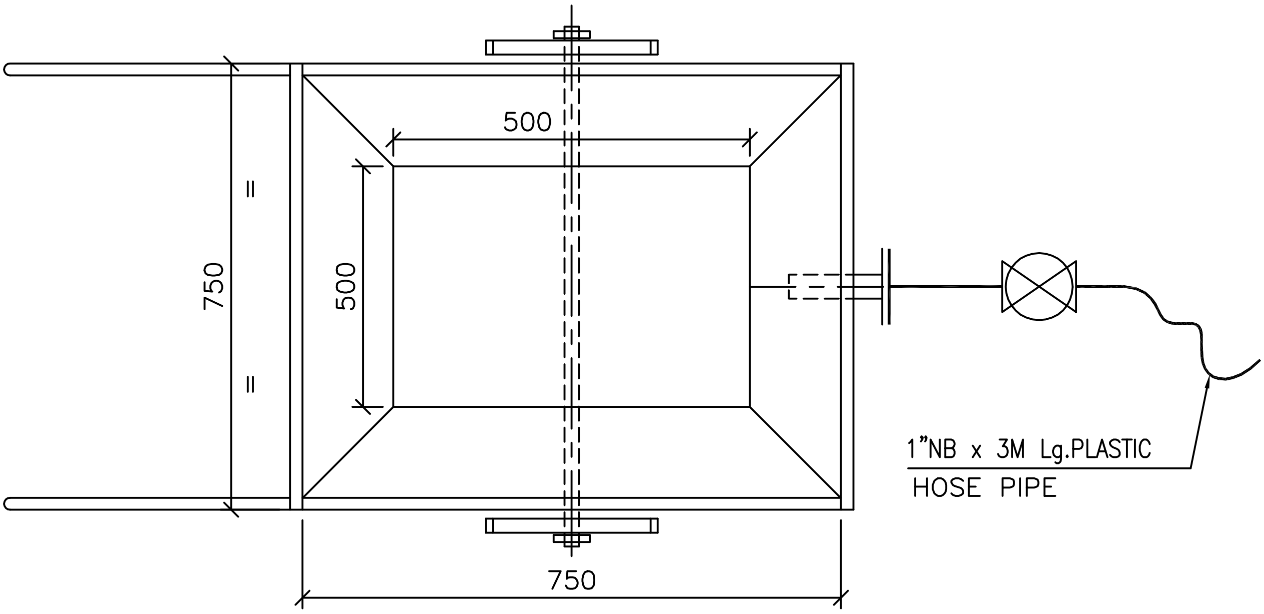
ETUDE SUR L'AMELIORATION DE L'ASSAINISSEMENT DE LA VILLE DE NIAMEY EN REPUBLIQUE DU NIGER	TITLE	SCALE NTS		DATE	29/11/00
proj. PILOT PLANT SEWAGE TREATMENT	DETAILS DU STOCKAGE DE LA SOLUTION DE CHLORE	DRN.	N.D.RAVAL	DESIGN	N.H.P
Client M/s. TOKYO ENGINEERING		CHKD	K.J.D.	APPD.	A.G.S.
		DRG.No. PL/528/ME-06		REV.	2

NOTE :-

1) VENDOR TO FURNISH FRAME ANGLE/PIPE SIZE.



ELEVATION

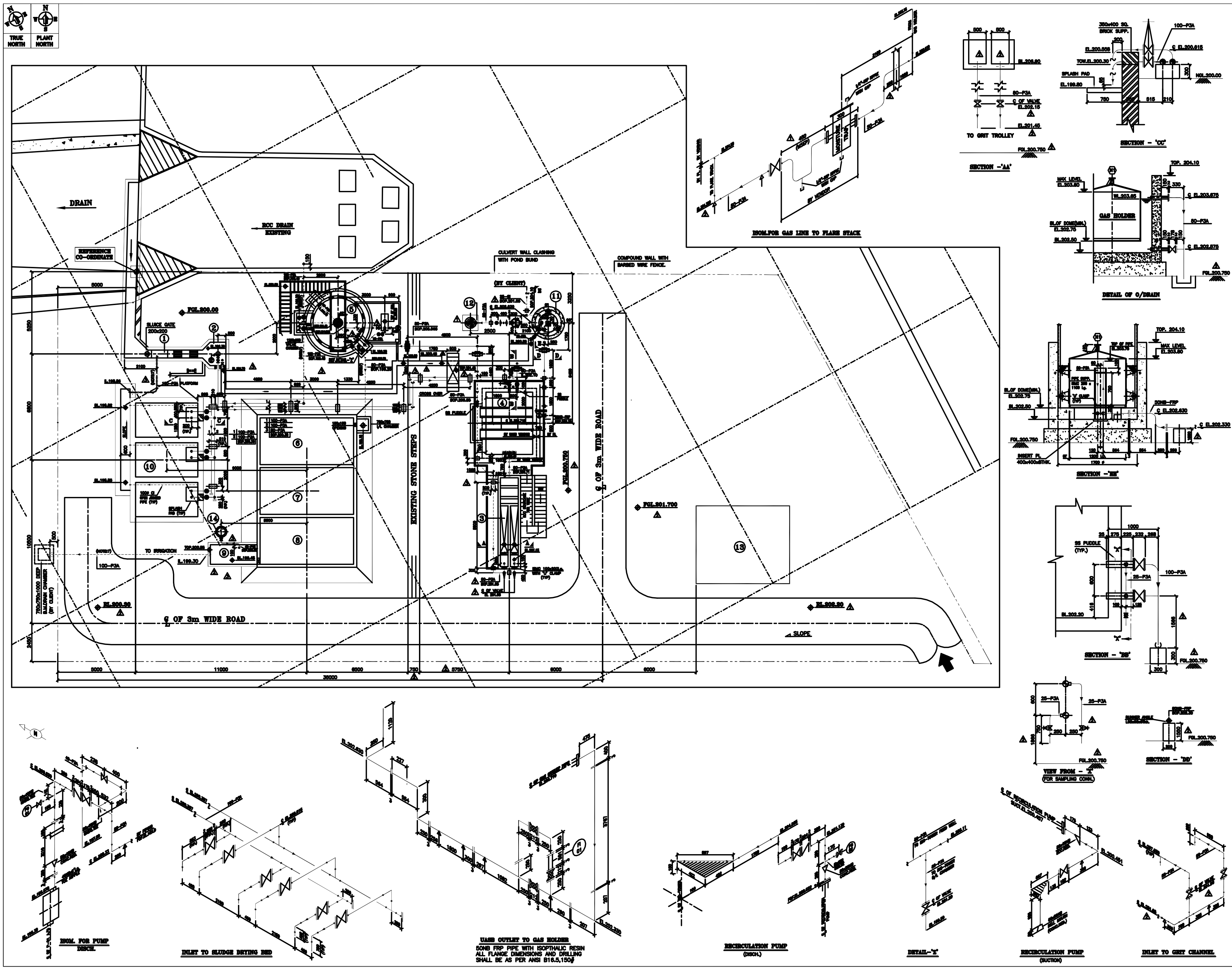


PLAN

M.O.C. :- IS:2062, 16 SWG WITH ANGLE/PIPE FRAME
CAPACITY :- $0.3M^3$
QTY :- 1 No.

AS BUILT 1

ETUDE SUR L'AMELIORATION DE L'ASSAINISSEMENT DE LA VILLE DE NIAMEY EN REPUBLIQUE DU NIGER	TITLE	SCALE	NTS	DATE	02.11.00
	CHARIOT POUR COLLECTE DU SABLE	DRN.	Kaushik	DESIGN	K.J.D
proj. PILOT PLANT SEWAGE TREATMENT		CHKD	K.J.D	APPD.	A.G.S.
Client M/s. TOKYO ENGINEERING		DRG.No. PL/528/ME/SK-01		REV.	1



No.	DATE	REVISION	CHD.	APPD.
0	10/01/01	SUBMITED FOR INFORMATION & APPROVAL	K.J.D	Y.S.T
1	24/01/01	REVISED AS MARKED	K.J.D	Y.S.T
2	27/02/01	REVISED AS PER CLIENT'S COMMENT.	K.J.D	A.G.S
3	28/07/01	SHOWN AS BUILT	Y.S.T	A.G.S

SR.No.	REFERENCE DRAWING	DRAWING No.
1	P & I DIAGRAM	PL/537/P-01
2	LAYOUT FOR PILOT PLANT	PL/537/L-01

NOTES:-

1) ALL DIMENSIONS ARE IN mm & LEVELS ARE IN METERS.
2) CENTER PIPE SUPPORT IN GAS HOLDER TO BE EPOXY PAINTED.
3) FOR PLATFORM ON INLET CHANNEL PLEASE REFER G.A.DRG.No, PL/528/GA-01
4) SERVICE WATER LINE TO CHLORINE SOLUTION TANK & GAS HOLDER SHALL BE LAID BY CLIENT.
5) PIPE SUPPORT IN UASB REACTOR TO BE FIXED PRACTICALLY AT SITE.
6) ALL THE DISTANCE OF VARIOUS UNITS ARE BASED ON REFERENCE CO-ORDINATE MARKED IN THE DRG.
7) ALL UNDERGROUND PIPES SHALL BE ENCASED IN P.C.C (1:3:6) WITH MINIMUM THICKNESS OF 50mm ALL AROUND OUTSIDE DIA.OF PIPE

SR. No.	DESCRIPTION	QTY.	SIZE
1	INLET CHANNEL & SCREENS	1	5.0 m X 0.5 m
2	PUMP PIT	1	1.5 m X 1.5 m
3	GRIT CHANNEL	2	0.5 m X 4.0 m
4	UASB REACTOR	1	4.0 m X 3.0 m
5	BIOTOWER	1	3.20 m ø
6	POND-1	1	6.0 m X 3.0 m
7	POND-2	1	6.0 m X 3.0 m
8	POND-3	1	6.0 m X 3.0 m
9	CHLORINATION CHAMBER	1	3.0 m X 1.5 m
10	SLUDGE DRYING BED	1	4.0m x 2.20 m
11	GAS HOLDER	1	1.2 m ø
12	FLARE STACK	1	1.5 m X 1.5m
13	MCC & CONTROL ROOM	1	6.0 m X 5.0m
14	CHLORINE SOLUTION TANK	1	0.440 m ø

AS BUILT

ETUDE SUR L'AMELIORATION DE L'ASSAINISSEMENT DE LA VILLE DE NIAMEY EN REPUBLIQUE DU NIGER

PROJECT: PILOT PLANT FOR SEWAGE TREATMENT ($100m^3$/day) - NIGER

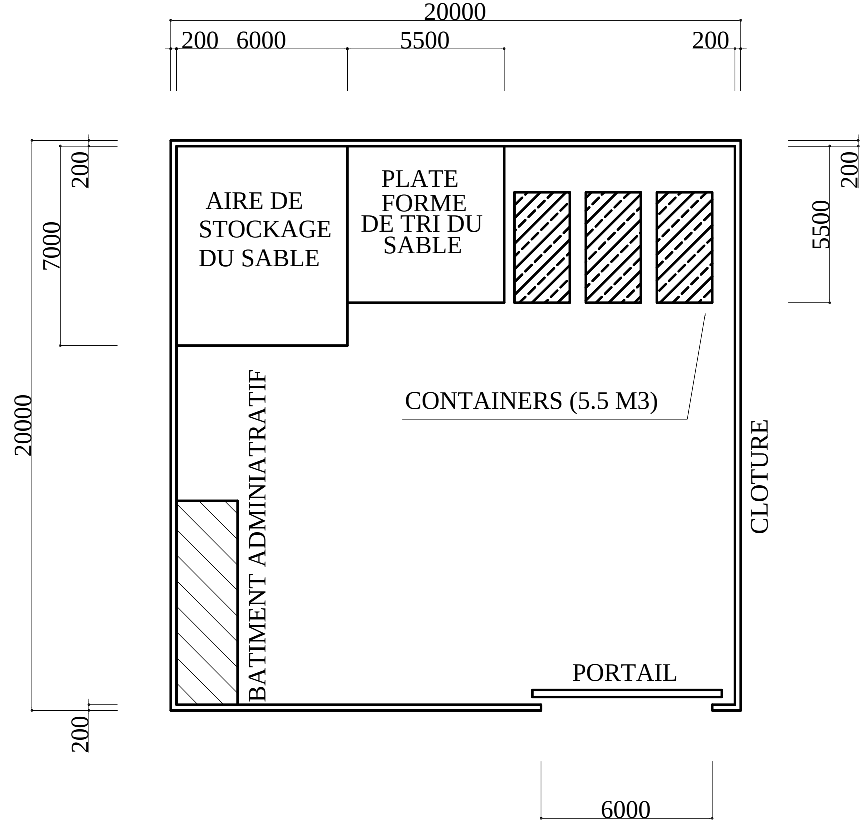
CLIENT: EAM NIAMEY - NIGER (J.I.C.A. STUDY)

TITLE: DISPOSITION DES CONDUITES INTERCONNECTEES D'ENSEMBLE

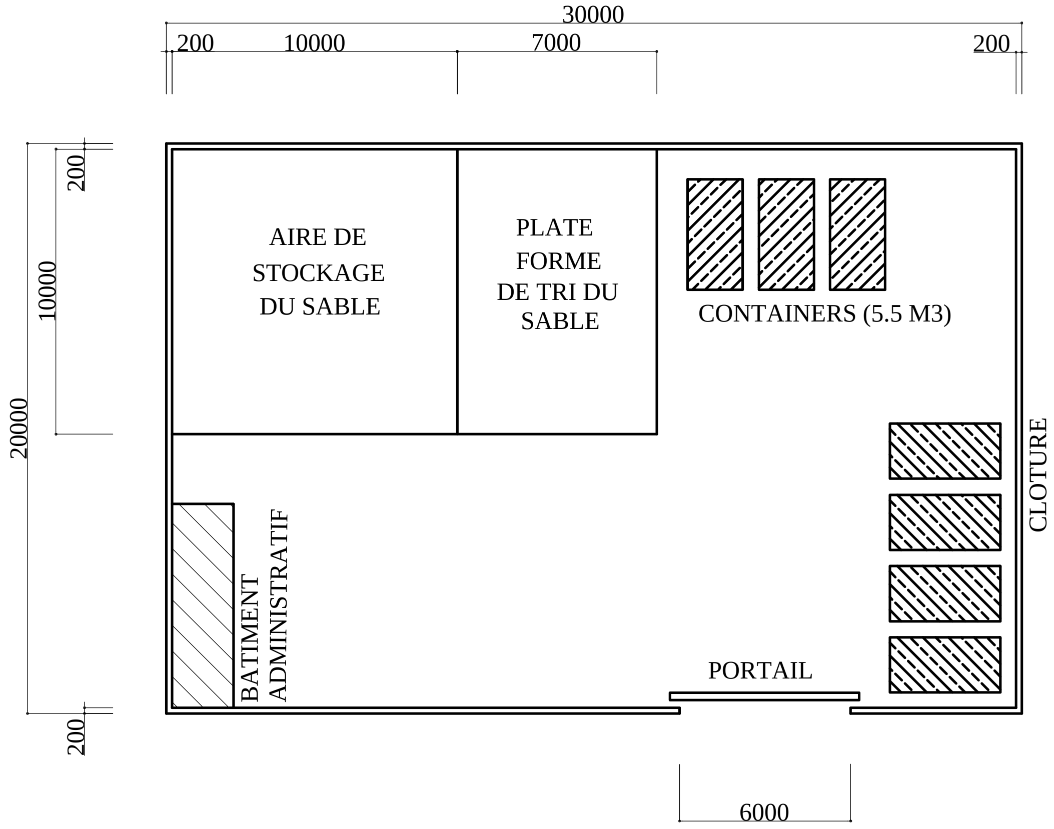
SCALE	1:75	SUPERSEDES DRG. NO.
DESIGNED	Y.S.T	
DRAWN	Kaushik	
CHECKED	K.J.D	SUPERSEDED BY DRG NO.
APPROVED	A.G.S	
DATE	08/11/00	

DRAWING NO. PL/528/MP-01 REV. 3

PLAN B. GESTION DES DECHETS SOLIDES



TYPE 1 (400 M2)



TYPE 2 (600 M2)

10 m

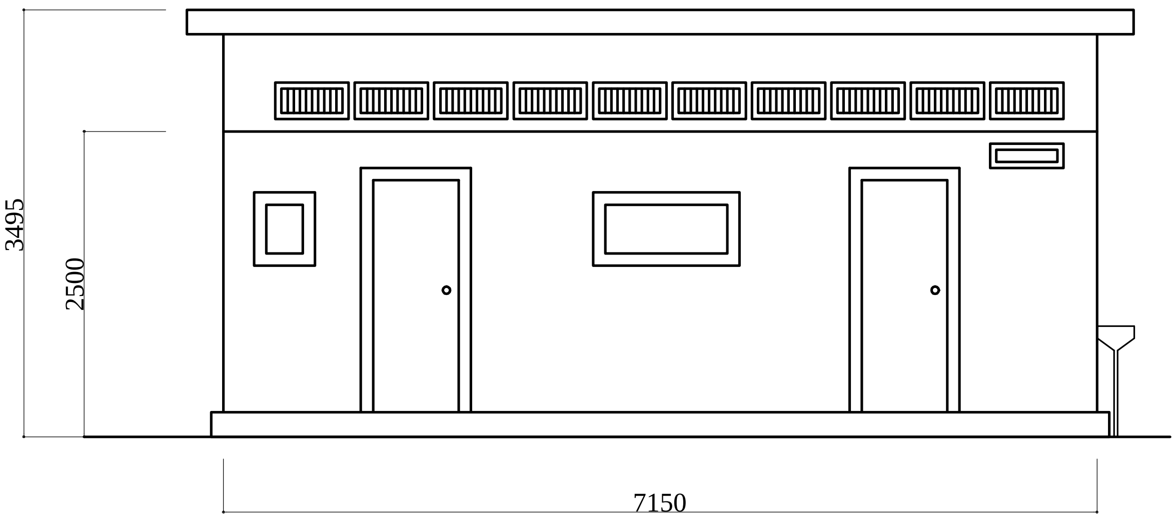
ETUDE SUR L'AMELIORATION DE L'ASSAINISSEMENT DE LA VILLE DE NIAMEY EN REPUBLIQUE DU NIGER

PLAN B-101
PLAN TYPE DU CENTRE DE TRI

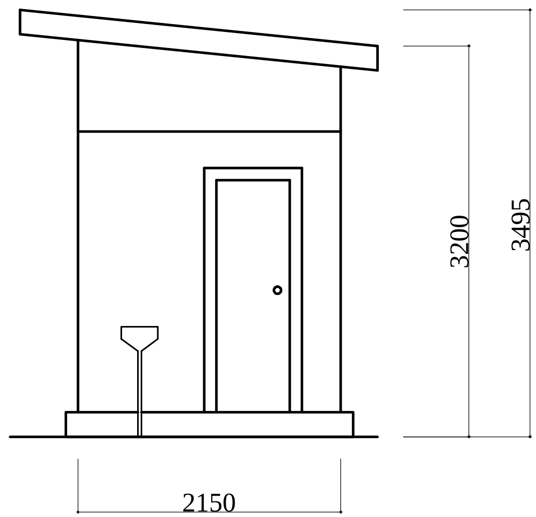
ECHELLE	1:200

AGENCE JAPONAISE DE LA COOPERATION INTERNATIONALE

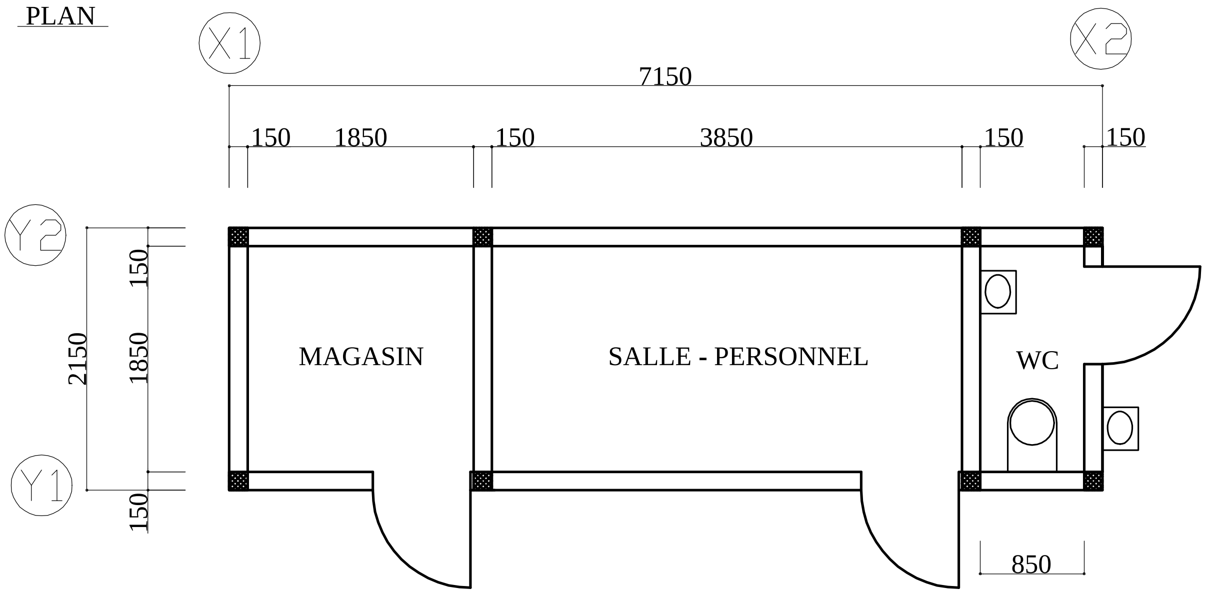
NIVEAU Y1

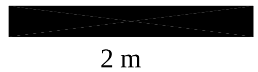


NIVEAU X2



PLAN





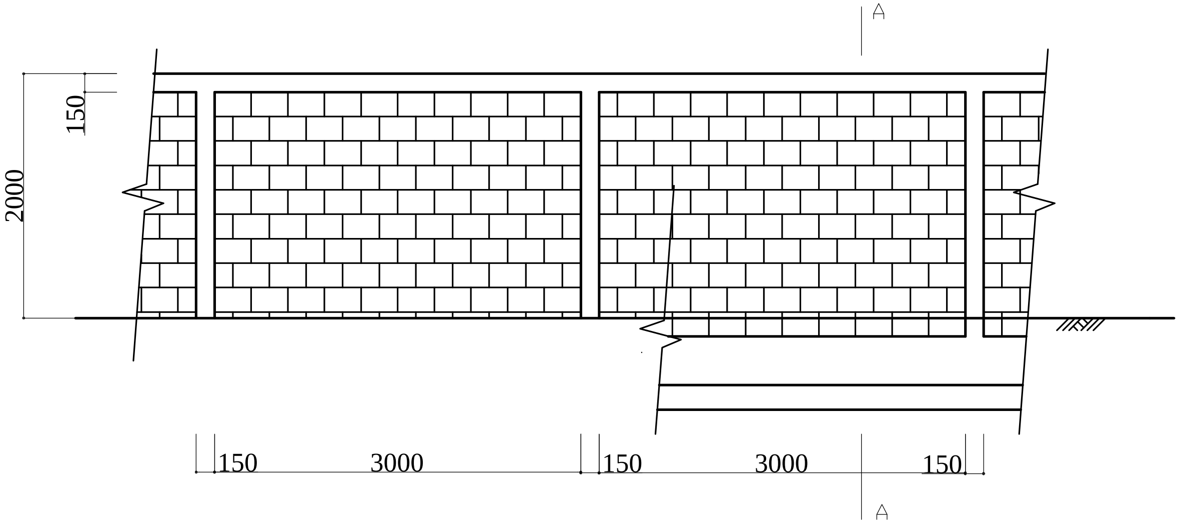
ETUDE SUR L'AMELIORATION DE L'ASSAINISSEMENT DE LA VILLE DE NIAMEY EN REPUBLIQUE DU NIGER

PLAN B-102
BATIMENT ADMINISTRATIF:
CENTRE DE TRI

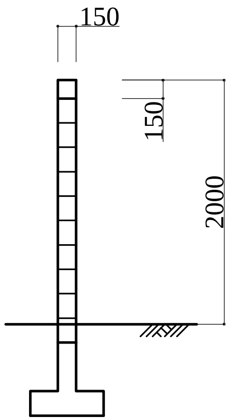
ECHELLE	1:50

AGENCE JAPONAISE DE LA COOPERATION INTERNATIONALE

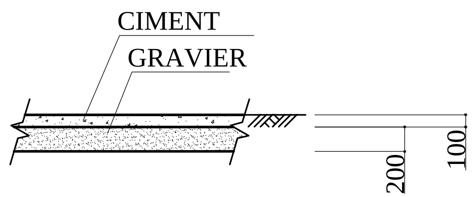
CLOTURE



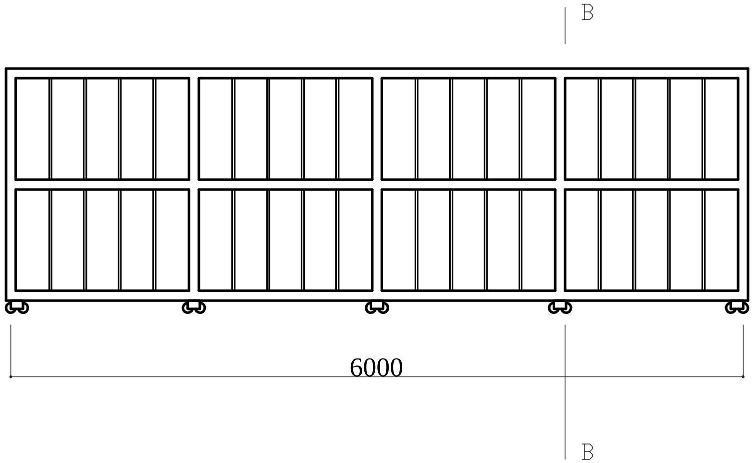
SECTION A-A



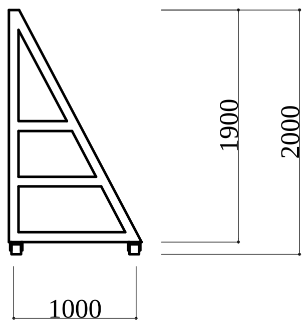
SECTION DE LA PLATE FORME DE TRI



PORTAIL



SECTION B-B



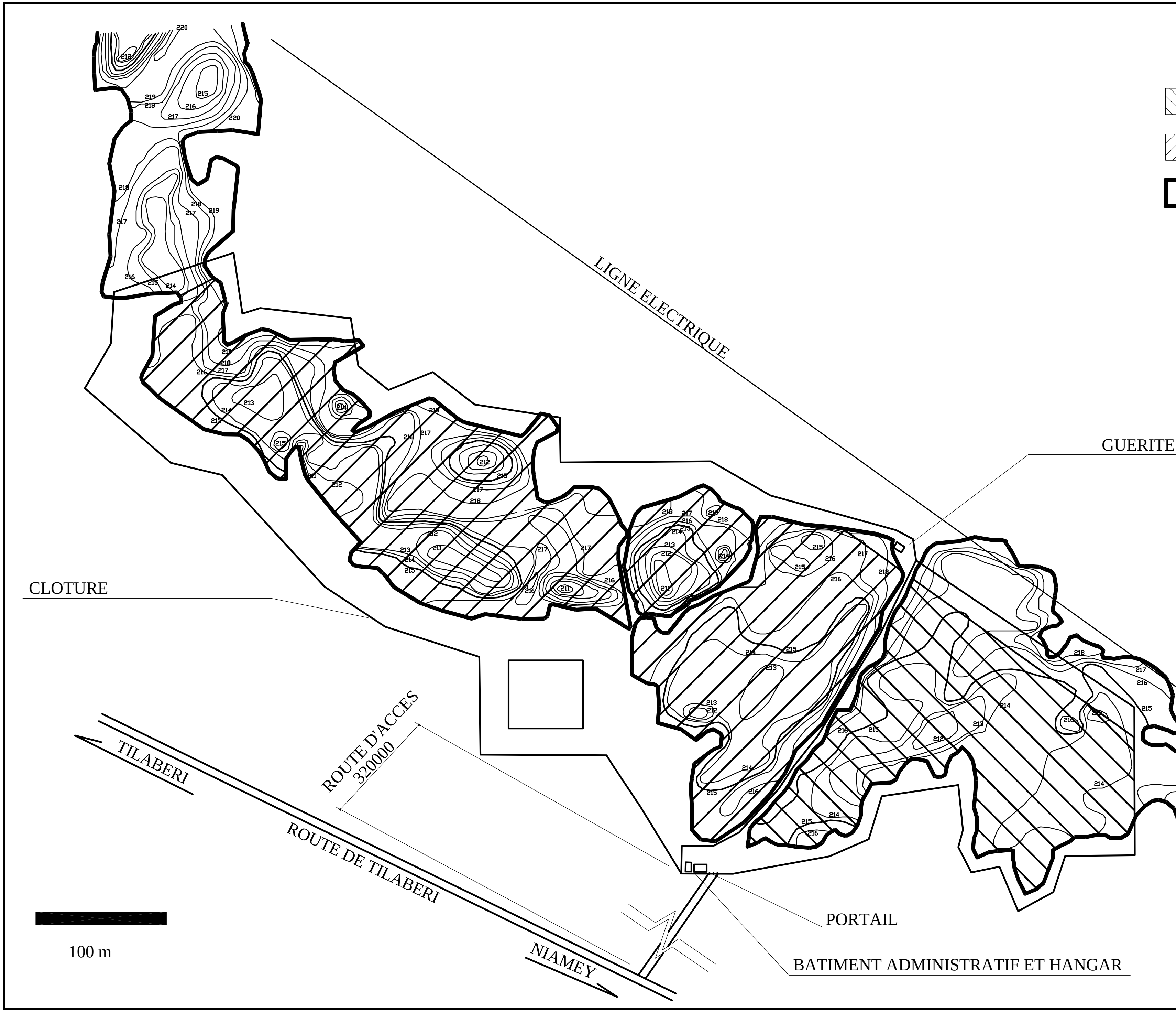
2 m

ETUDE SUR L'AMELIORATION DE L'ASSAINISSEMENT DE LA VILLE DE NIAMEY EN REPUBLIQUE DU NIGER

PLAN B-103
CLOTURE, PORTAIL ET PLATE FORME: CENTRE DE TRI

ECHELLE	1:50

AGENCE JAPONAISE DE LA COOPERATION INTERNATIONALE

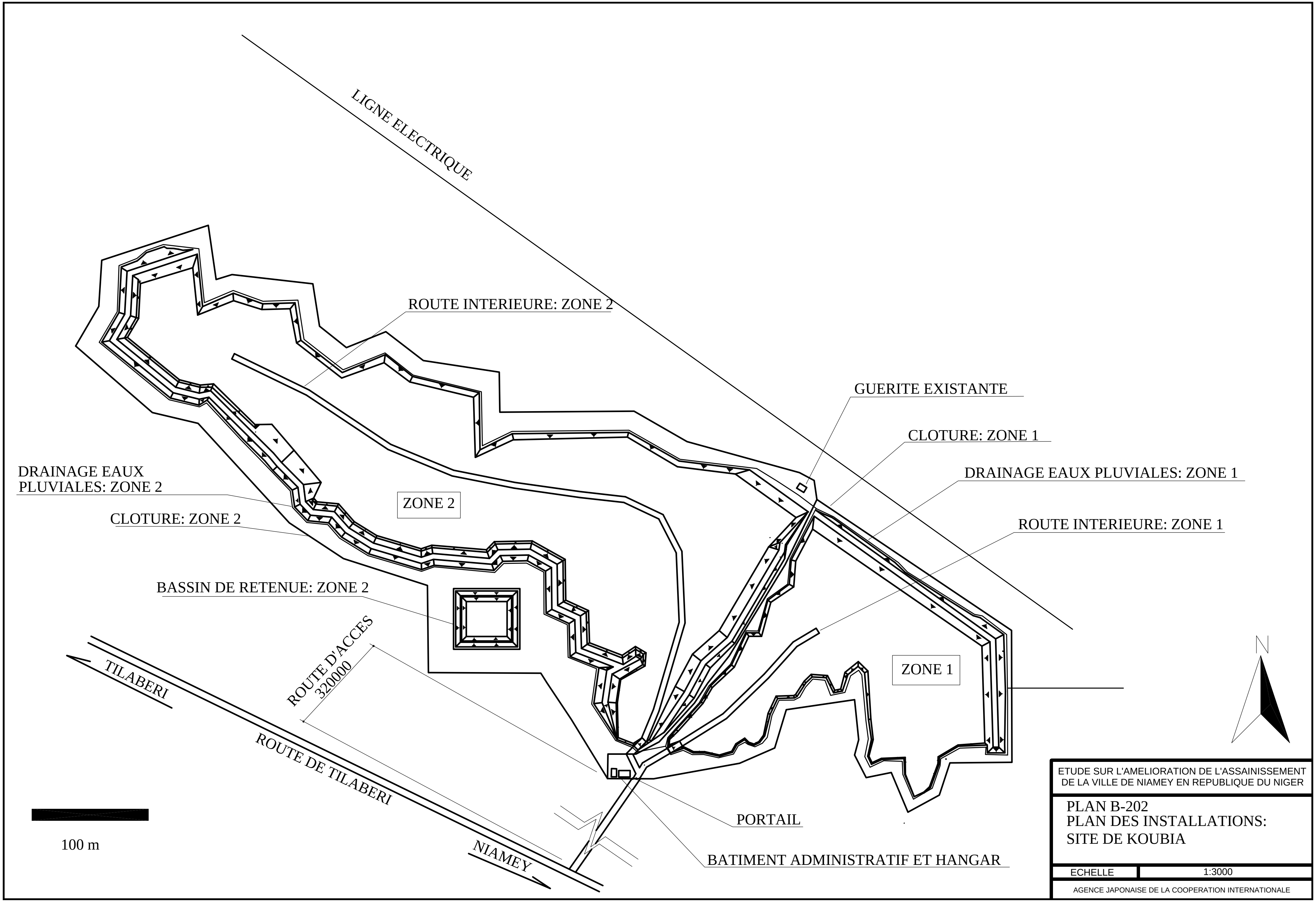


ETUDE SUR L'AMELIORATION DE L'ASSAINISSEMENT DE LA VILLE DE NIAMEY EN REPUBLIQUE DU NIGER

PLAN B-201
PLAN DE MASSE DE
LA DECHARGE DE KOUBIA

ECHELLE	1:3000

AGENCE JAPONAISE DE LA COPPERATION INTERNATIONALE

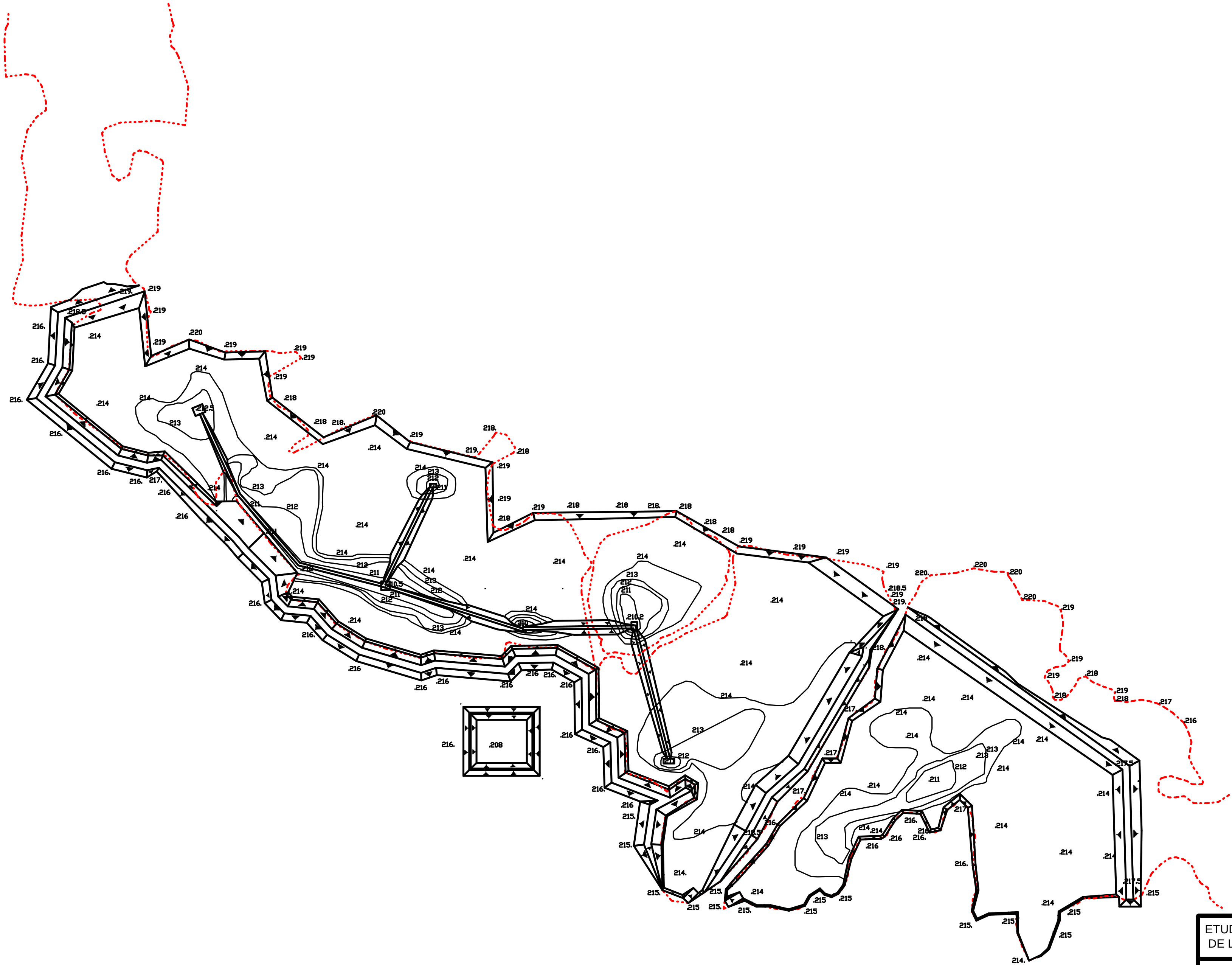


ETUDE SUR L'AMELIORATION DE L'ASSAINISSEMENT DE LA VILLE DE NIAMEY EN REPUBLIQUE DU NIGER

PLAN B-202
PLAN DES INSTALLATIONS:
SITE DE KOUBIA

ECHELLE	1:3000

AGENCE JAPONAISE DE LA COOPERATION INTERNATIONALE



LEGENDE

CARRIERE

N

100 m

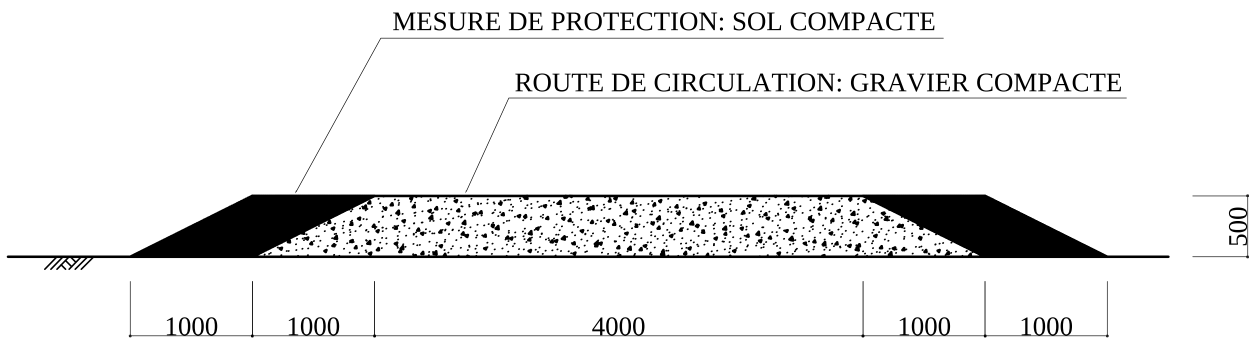
ETUDE SUR L'AMELIORATION DE L'ASSAINISSEMENT DE LA VILLE DE NIAMEY EN REPUBLIQUE DU NIGER

PLAN B-203
ZONE DE TERRASSEMENT ET REMBLAI: SITE DE KOUBIA

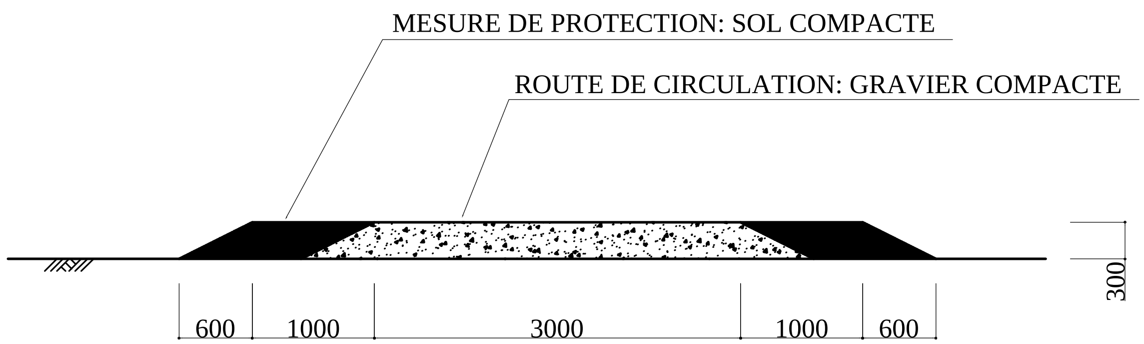
ECHELLE	1:3000

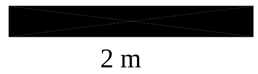
AGENCE JAPONAISE DE LA COOPERATION INTERNATIONALE

COUPE SCHEMATIQUE DE LA ROUTE D'ACCES



COUPE SCHEMATIQUE DE LA ROUTE INTERIEURE



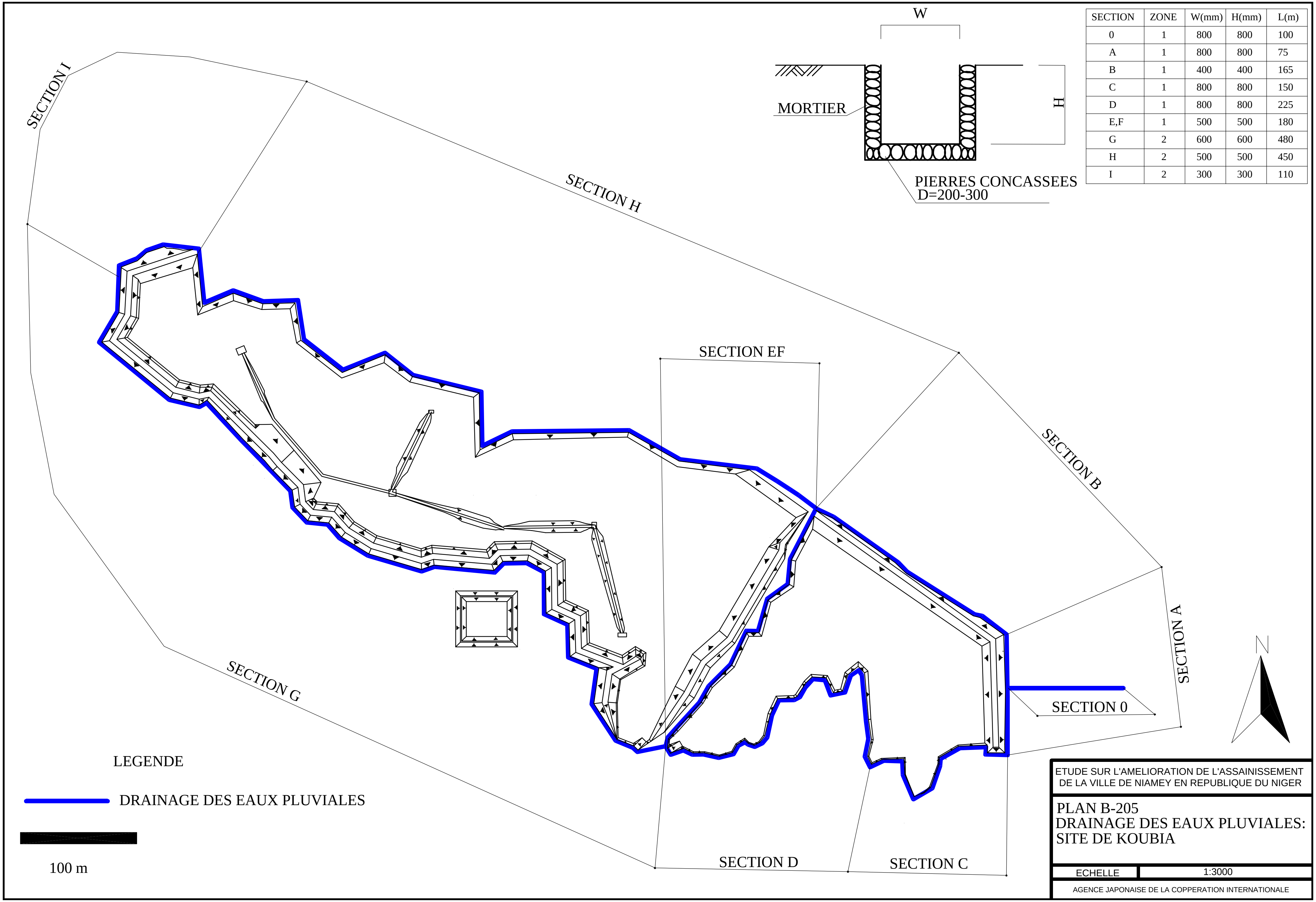


ETUDE SUR L'AMELIORATION DE L'ASSAINISSEMENT DE LA VILLE DE NIAMEY EN REPUBLIQUE DU NIGER

PLAN B-204
PLAN DES ROUTES D'ACCES ET INTERIEURE: SITE DE KOUBIA

ECHELLE	1:50

AGENCE JAPONAISE DE LA COOPERATION INTERNATIONALE



SECTION	ZONE	W(mm)	H(mm)	L(m)
0	1	800	800	100
A	1	800	800	75
B	1	400	400	165
C	1	800	800	150
D	1	800	800	225
E,F	1	500	500	180
G	2	600	600	480
H	2	500	500	450
I	2	300	300	110

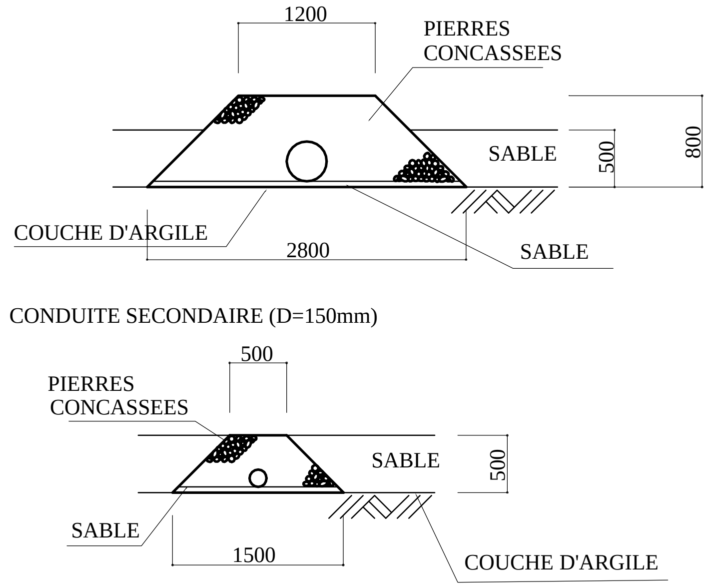
ETUDE SUR L'AMELIORATION DE L'ASSAINISSEMENT
DE LA VILLE DE NIAMEY EN REPUBLIQUE DU NIGER

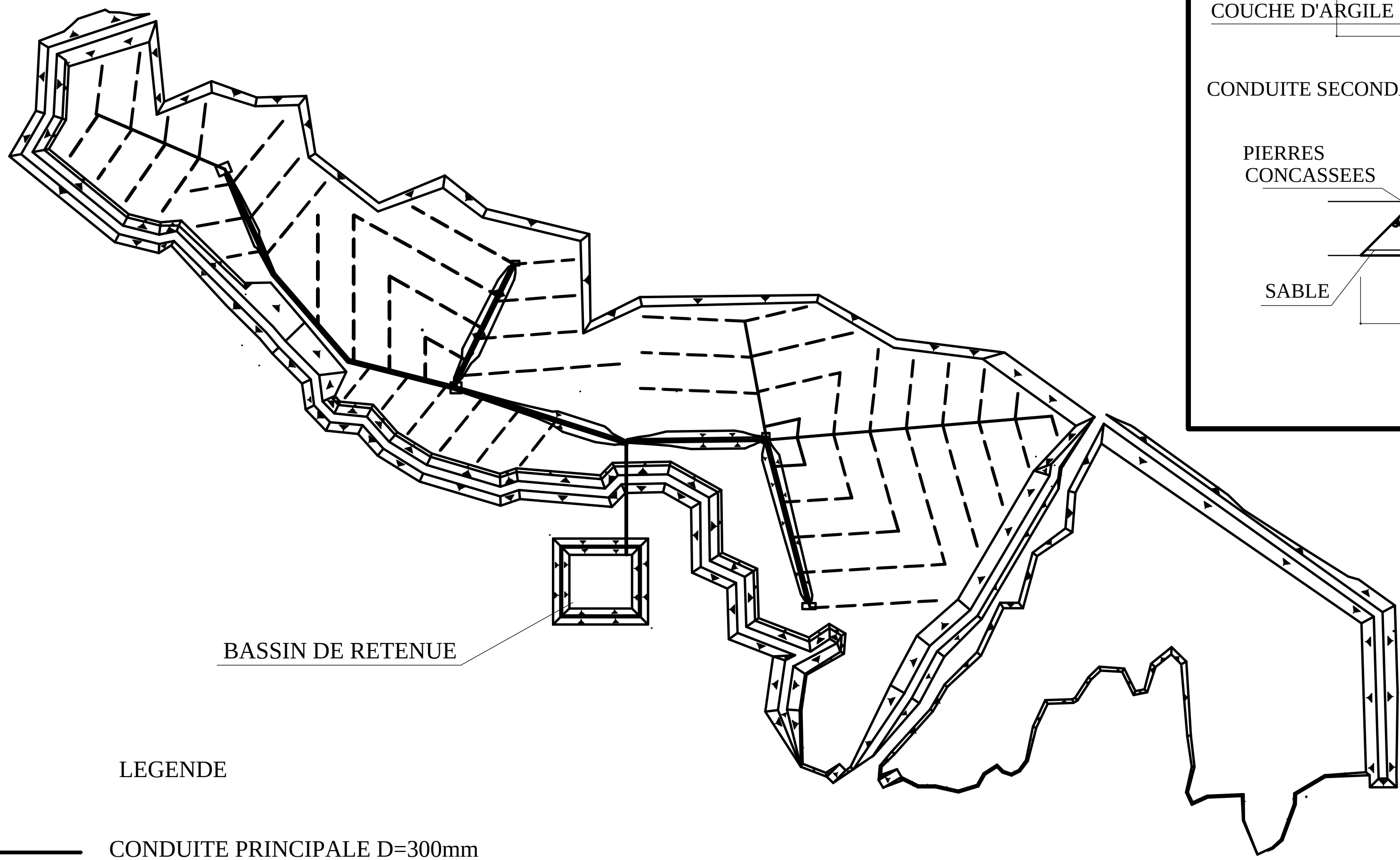
PLAN B-205
DRAINAGE DES EAUX PLUVIALES:
SITE DE KOUBIA

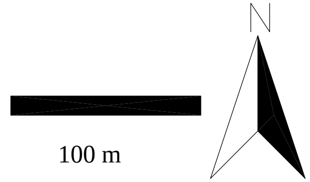
ECHELLE	1:3000

AGENCE JAPONAISE DE LA COPPERATION INTERNATIONALE

COUPE DE SUPPORT DES CONDUITES (1:50)







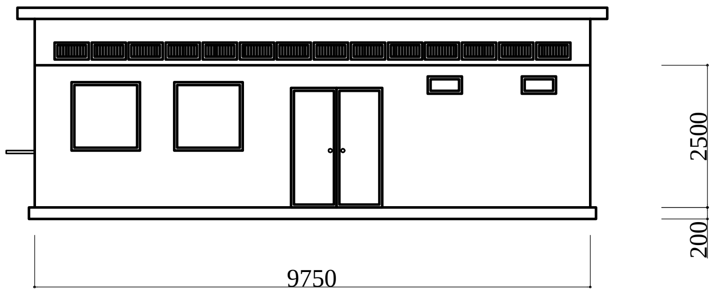
LEGENDE

CONDUITE PRINCIPALE D=300mm

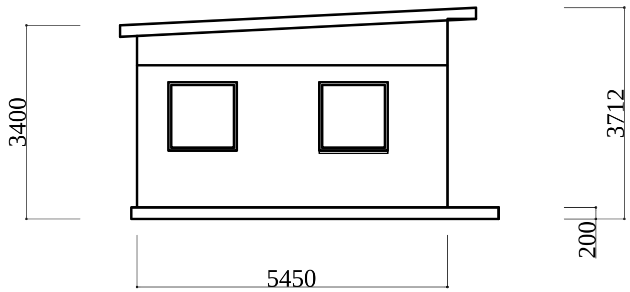
CONDUITE SECONDAIRE D=150mm

ETUDE SUR L'AMELIORATION DE L'ASSAINISSEMENT DE LA VILLE DE NIAMEY EN REPUBLIQUE DU NIGER	
PLAN B-206 SYSTEME DE DRAINAGE DE LIXIVIAT: SITE DE KOUBIA	
ECHELLE	1:3000
AGENCE JAPONAISE DE LA COPPERATION INTERNATIONALE	

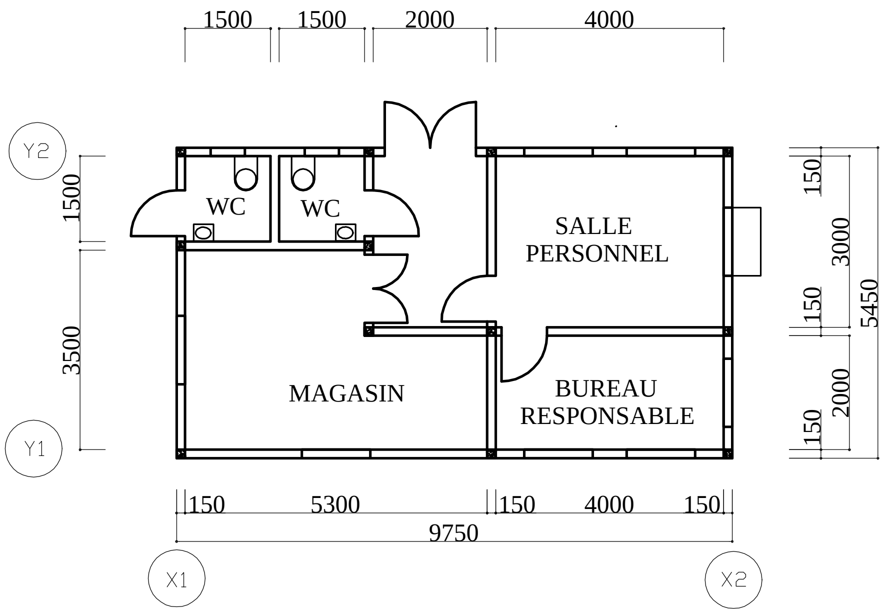
NIVEAU Y2



NIVEAU X2



PLAN

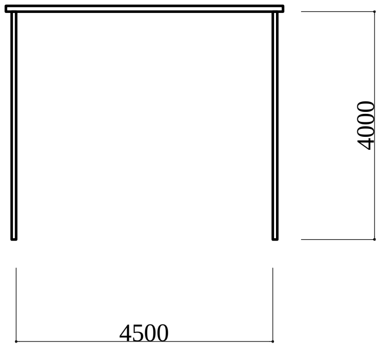


2m

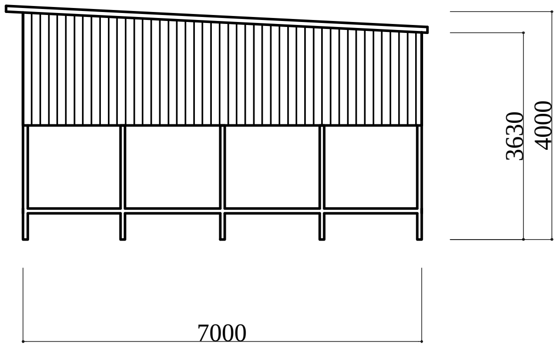
ETUDE SUR L'AMELIORATION DE L'ASSAINISSEMENT DE LA VILLE DE NIAMEY EN REPUBLIQUE DU NIGER
PLAN B-207 BATIMENT ADMINISTRATIF: SITE DE KOUBIA

ECHELLE	1:100
AGENCE JAPONAISE DE LA COOPERATION INTERNATIONALE	

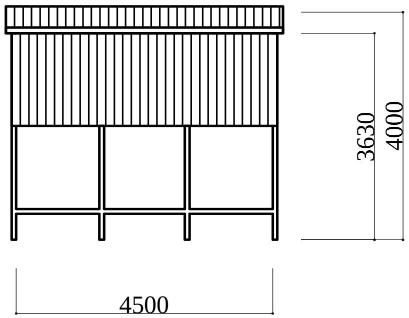
VUE DE FACE



VUE DU COTE



VUE ARRIERE



2m

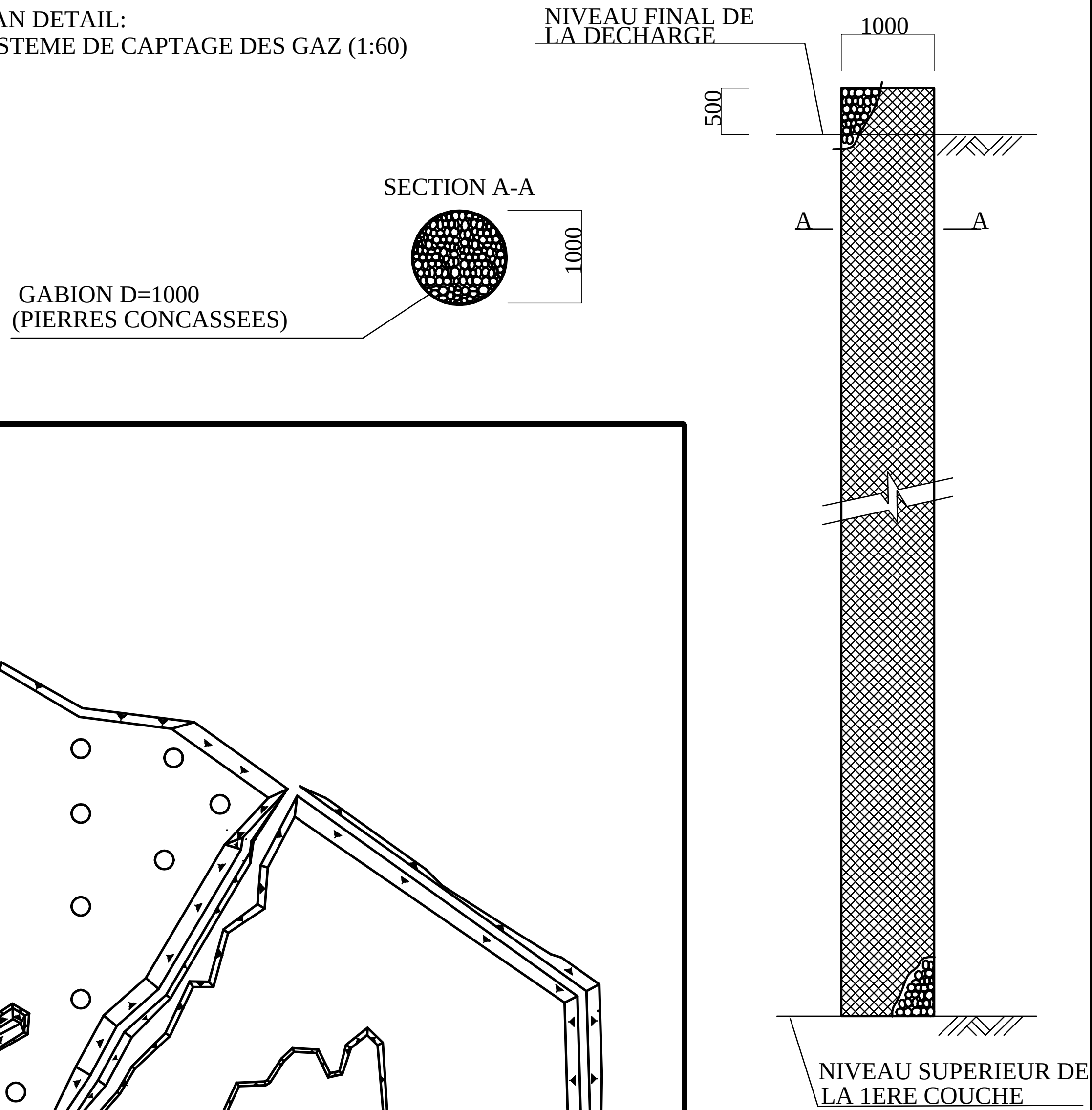
ETUDE SUR L'AMELIORATION DE L'ASSAINISSEMENT DE LA VILLE DE NIAMEY EN REPUBLIQUE DU NIGER

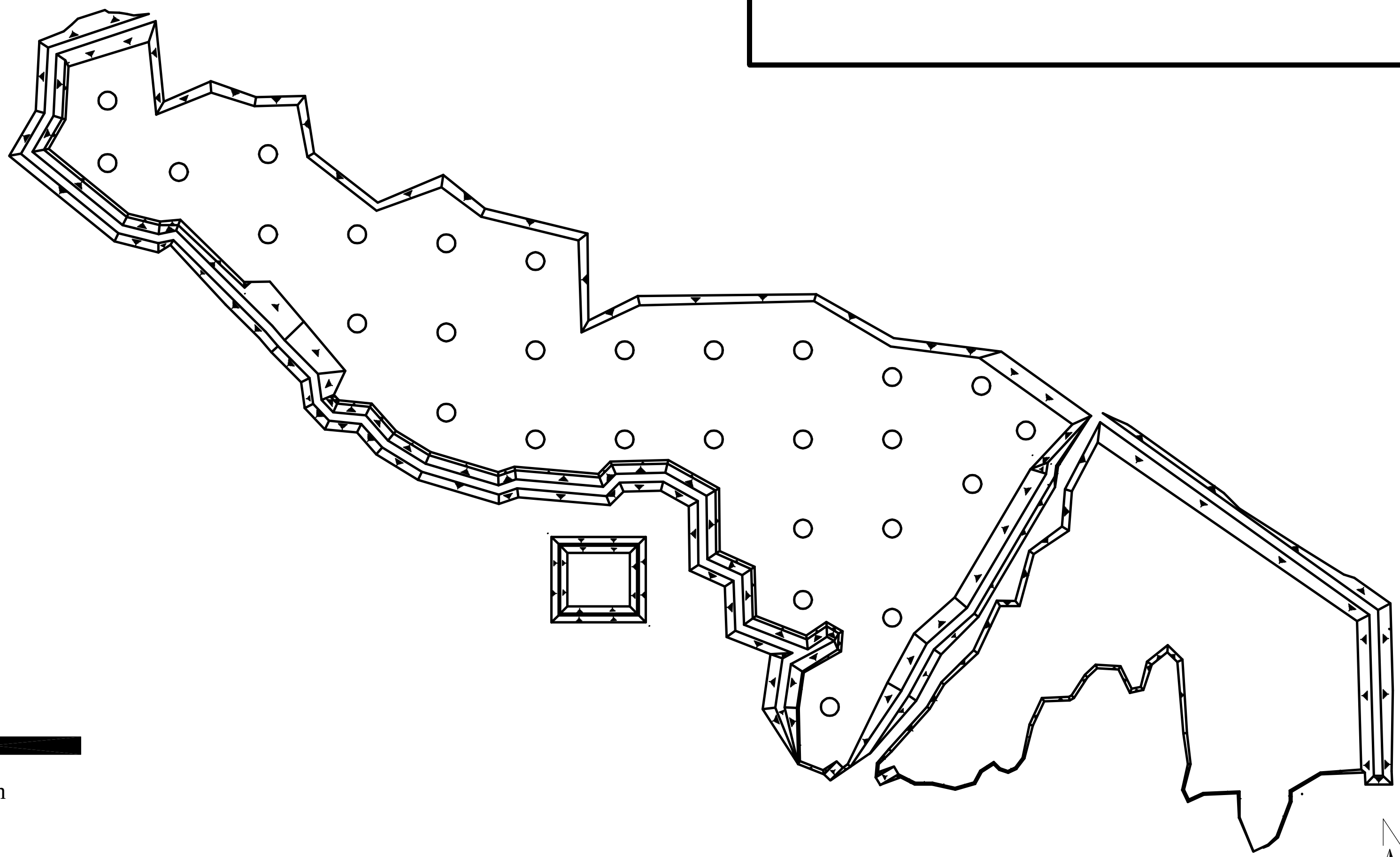
PLAN B-208
HANGAR:
SITE DE KOUBIA

ECHELLE	1:100

AGENCE JAPONAISE DE LA COOPERATION INTERNATIONALE

PLAN DETAIL:
SYSTEME DE CAPTAGE DES GAZ (1:60)





100 m

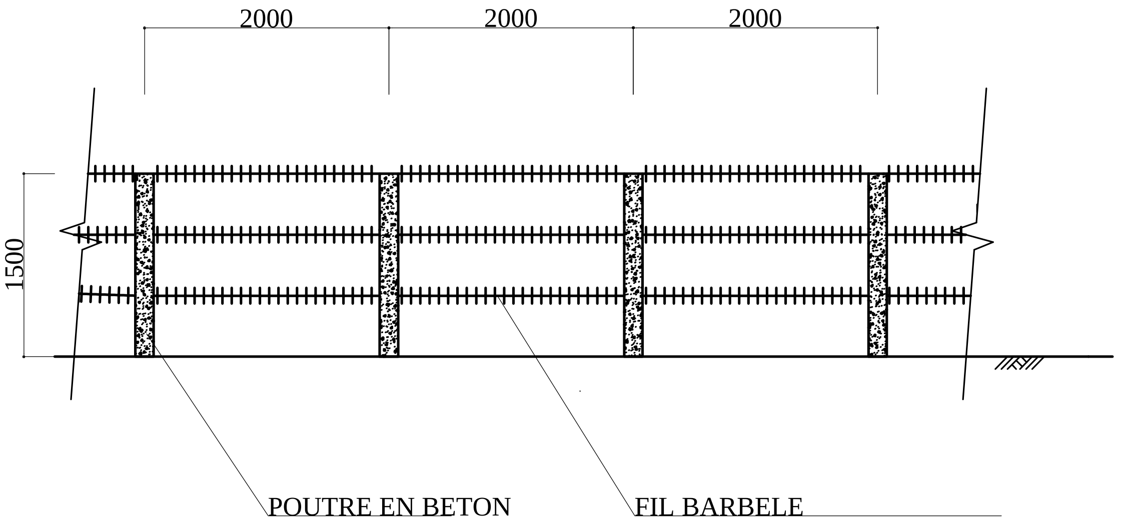
LEGENDE

○ PLAN DU SYSTEME DE CAPTAGE DES GAZ

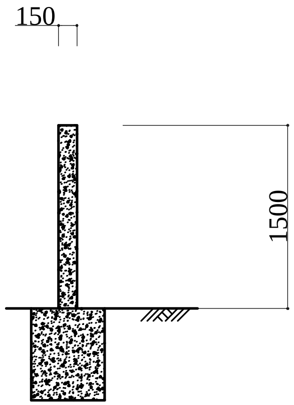
N

ETUDE SUR L'AMELIORATION DE L'ASSAINISSEMENT DE LA VILLE DE NIAMEY EN REPUBLIQUE DU NIGER	
PLAN B-209 PRINCIPE DU SYSTEME DE CAPTAGE DES GAZ: SITE DE KOUBIA	
ECHELLE	1:3000
AGENCE JAPONAISE DE LA COOPERATION INTERNATIONALE	

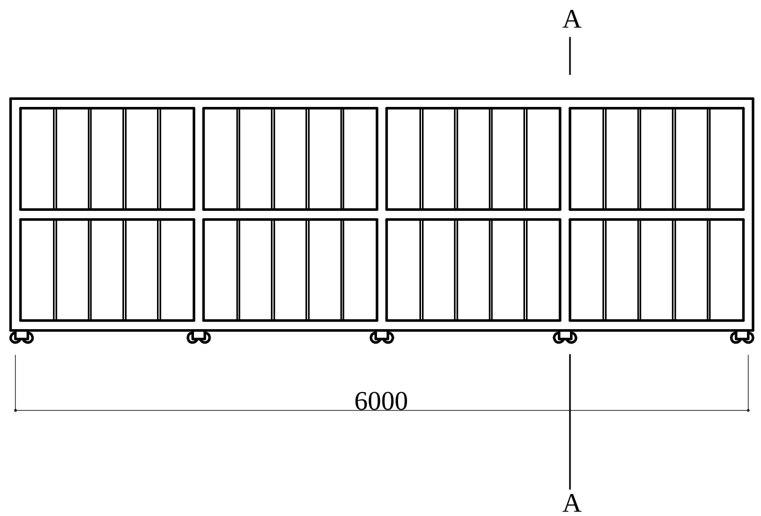
CLOTURE



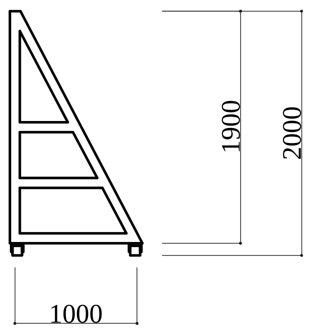
PLAN DE LA POUTRE

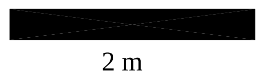


PORTAIL

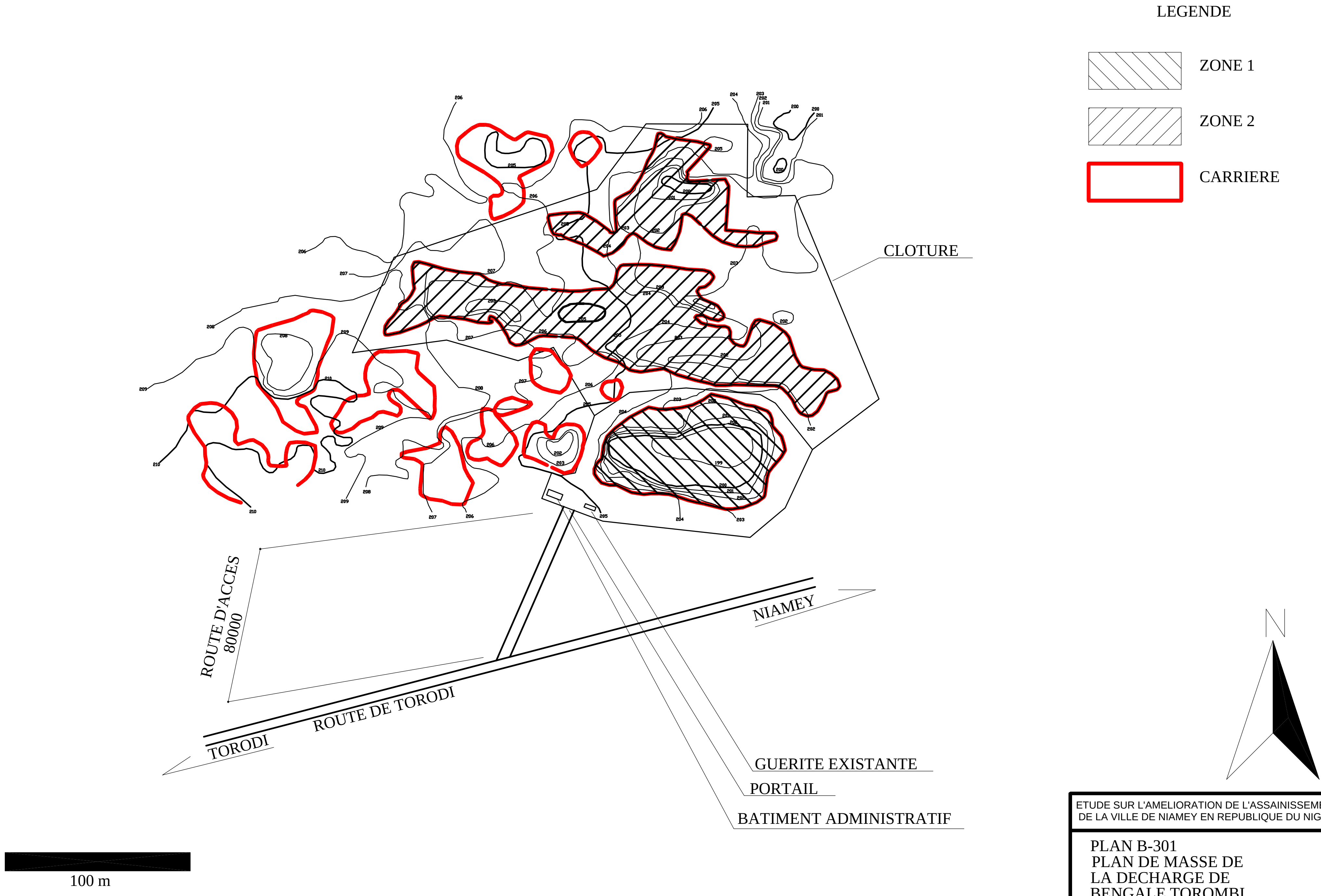


SECTION A-A





ETUDE SUR L'AMELIORATION DE L'ASSAINISSEMENT DE LA VILLE DE NIAMEY EN REPUBLIQUE DU NIGER	
PLAN B-210 PLAN DU PORTAIL ET DE LA CLOTURE: SITE DE KOUBIA	
ECHELLE	1:50
AGENCE JAPONAISE DE LA COOPERATION INTERNATIONALE	

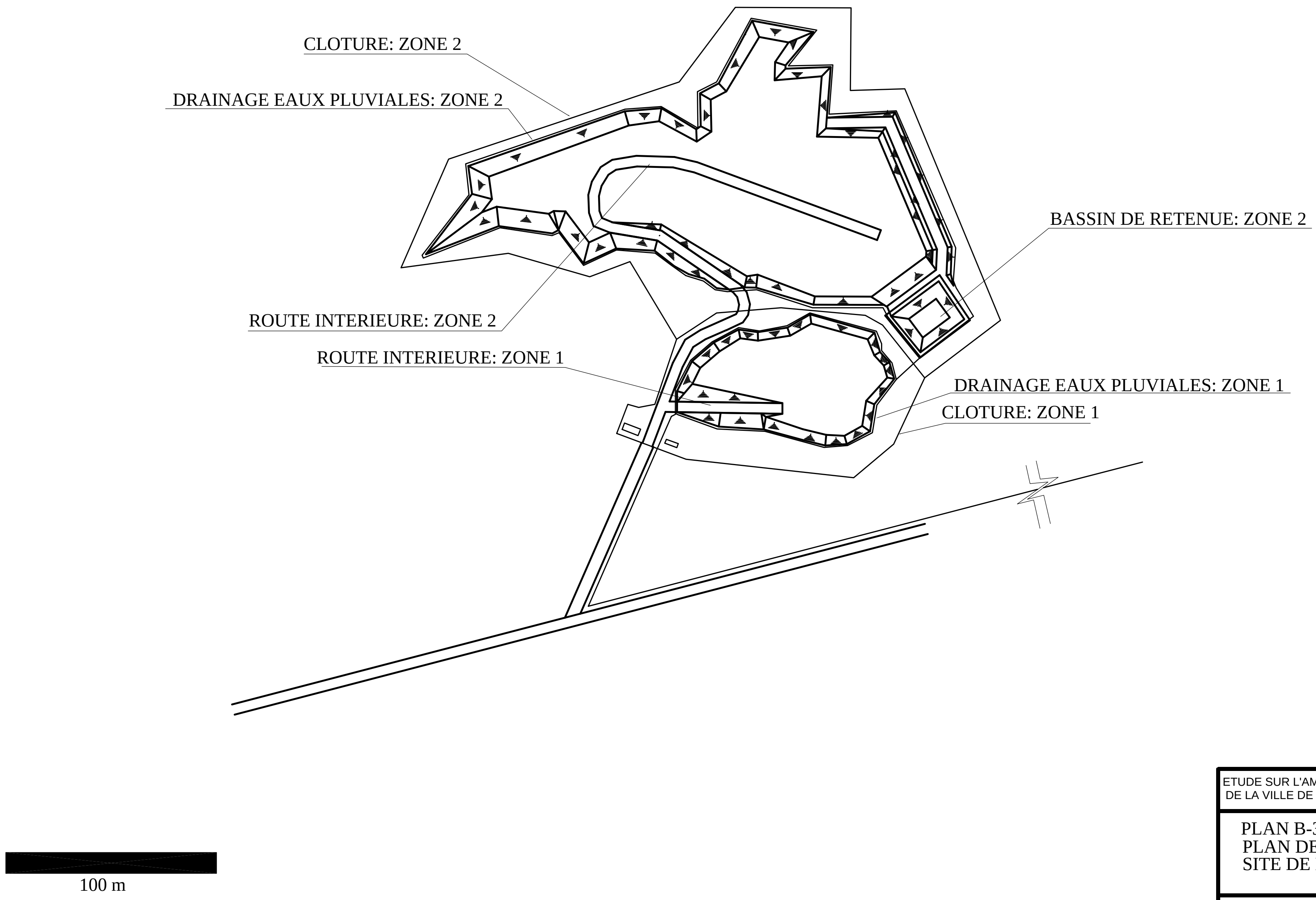


ETUDE SUR L'AMELIORATION DE L'ASSAINISSEMENT
DE LA VILLE DE NIAMEY EN REPUBLIQUE DU NIGER

PLAN B-301
PLAN DE MASSE DE
LA DECHARGE DE
BENGALE TOROMBI

ECHELLE	1:2000

AGENCE JAPONAISE DE LA COOPERATION INTERNATIONALE

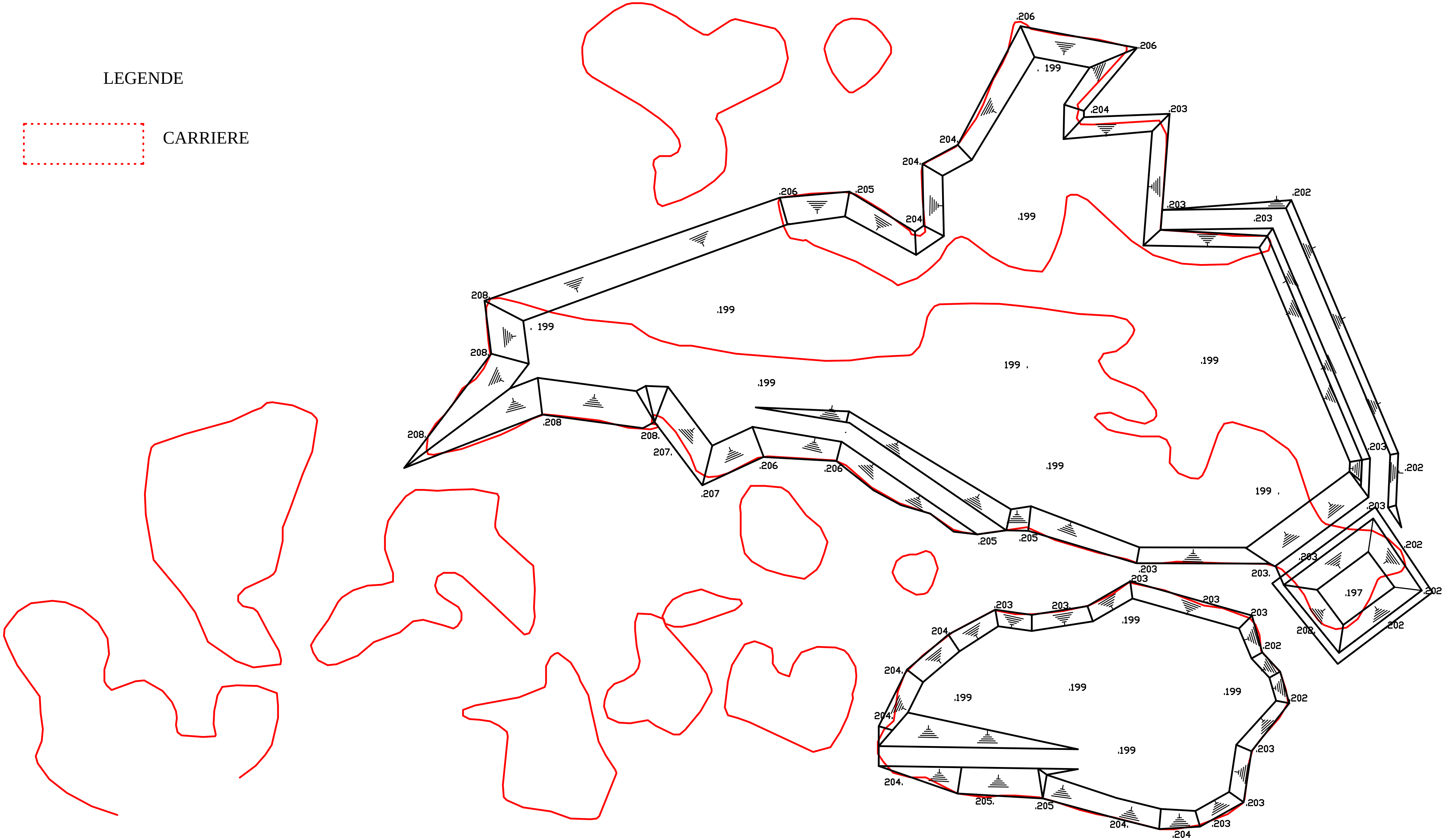


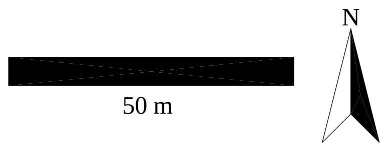
ETUDE SUR L'AMELIORATION DE L'ASSAINISSEMENT DE LA VILLE DE NIAMEY EN REPUBLIQUE DU NIGER

PLAN B-302
PLAN DES INSTALLATIONS:
SITE DE BENGALE TOROMBI

ECHELLE	1:2000

AGENCE JAPONAISE DE LA COOPERATION INTERNATIONALE



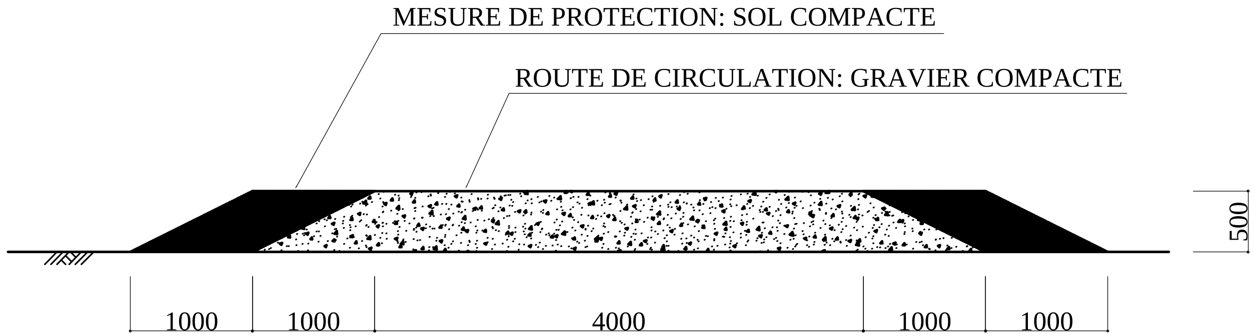


ETUDE SUR L'AMELIORATION DE L'ASSAINISSEMENT DE LA VILLE DE NIAMEY EN REPUBLIQUE DU NIGER
PLAN B-303 ZONE DE TERRASSEMENT ET REMBLAI: SITE DE BENGALE TOROMBI

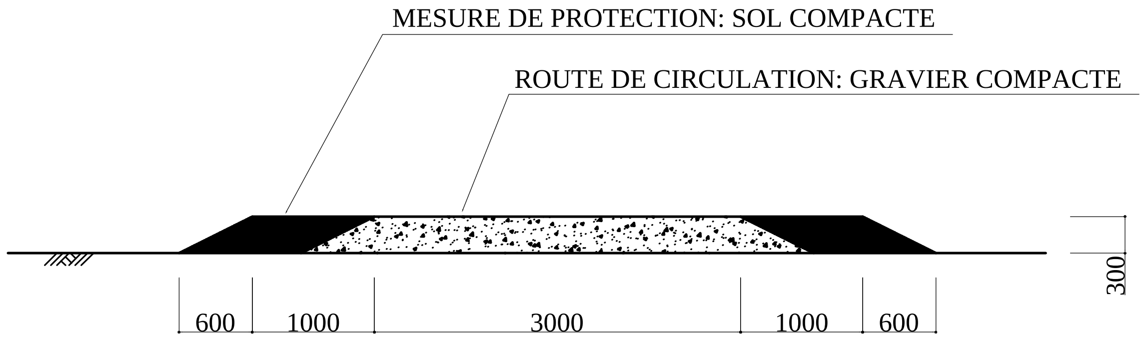
ECHELLE	1:1000

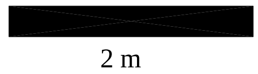
AGENCE JAPONAISE DE LA COOPERATION INTERNATIONALE

COUPE SCHEMATIQUE DE LA ROUTE D'ACCES



COUPE SCHEMATIQUE DE LA ROUTE INTERIEURE





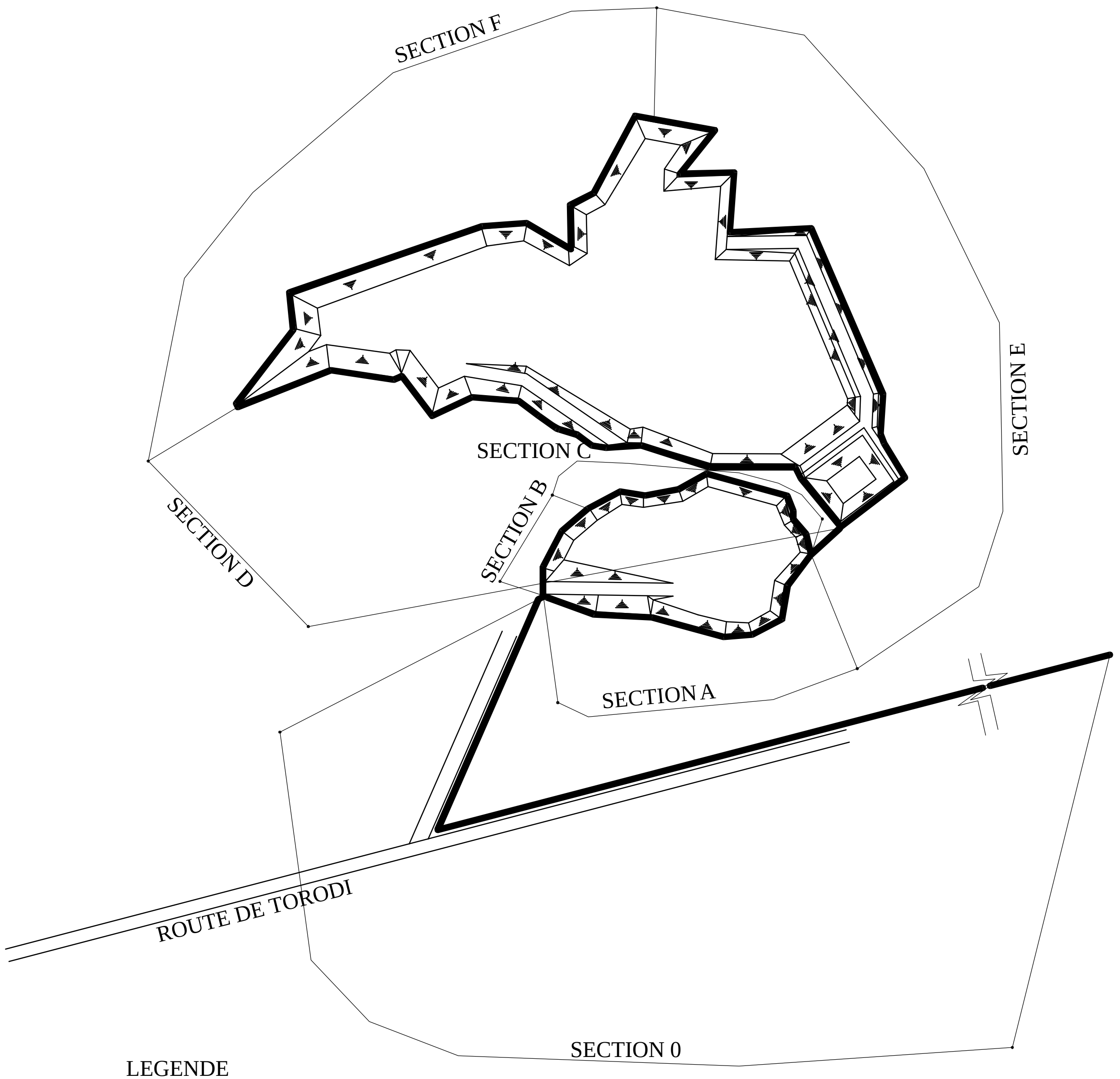
ETUDE SUR L'AMELIORATION DE L'ASSAINISSEMENT DE LA VILLE DE NIAMEY EN REPUBLIQUE DU NIGER

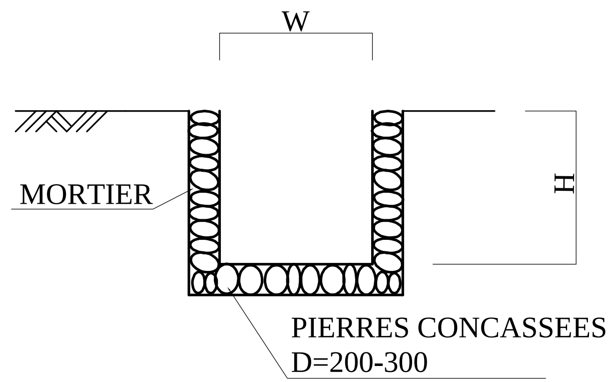
PLAN B-304
PLAN DES ROUTES D'ACCES ET INTERIEURE: SITE DE BENGALE TOROMBI

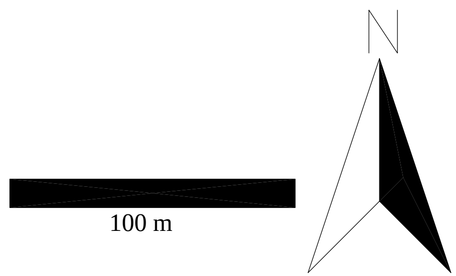
ECHELLE	1:50

AGENCE JAPONAISE DE LA COOPERATION INTERNATIONALE

SECTION	ZONE	W(mm)	H(mm)	L(m)
0	1	800	800	250
A	1	700	700	135
B	1	300	300	45
C	1	300	300	102
D	2	300	300	263
E	2	400	400	225
F	2	300	300	248







LEGENDE

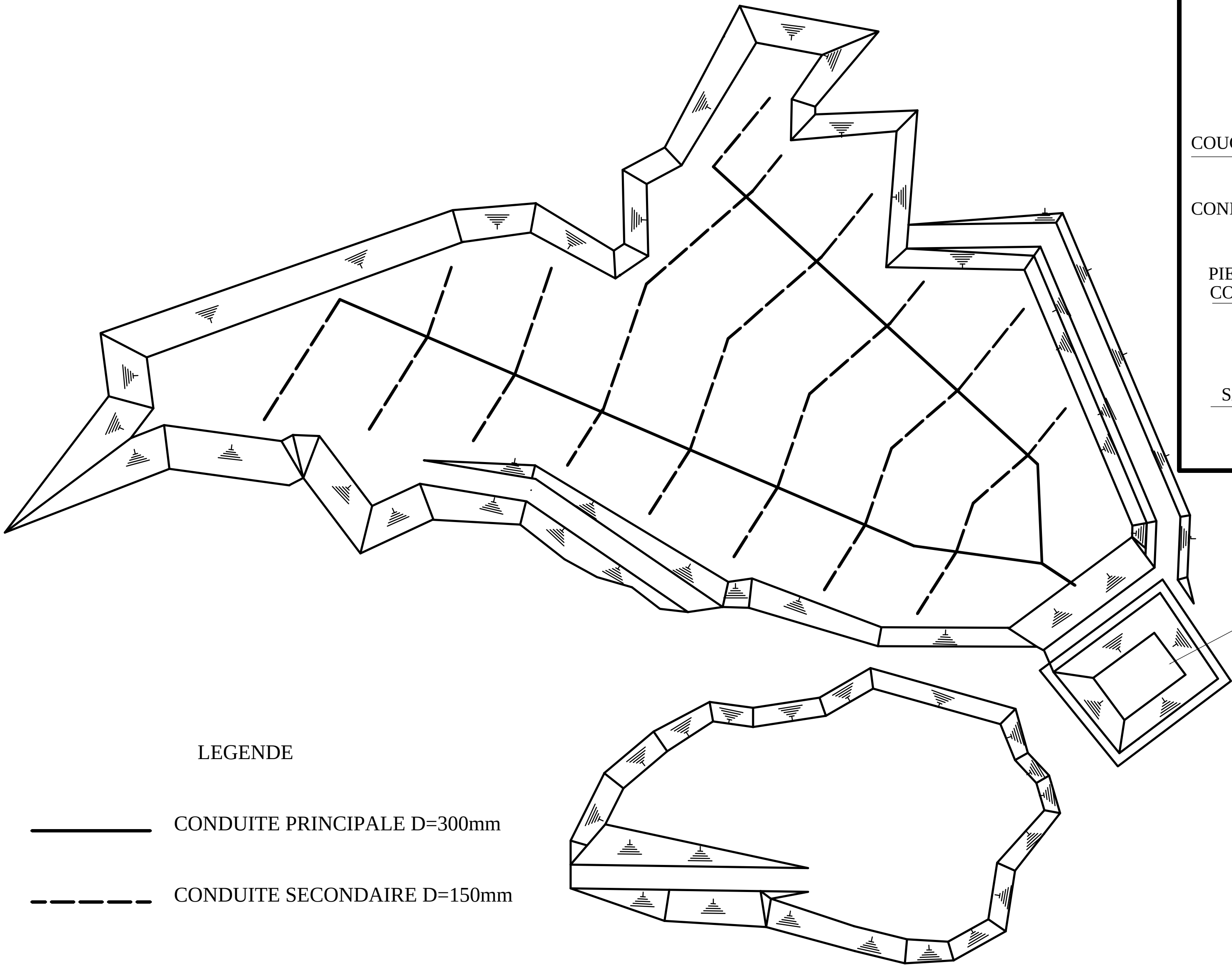
DRAINAGE DES EAUX PLUVIALES

ETUDE SUR L'AMELIORATION DE L'ASSAINISSEMENT DE LA VILLE DE NIAMEY EN REPUBLIQUE DU NIGER

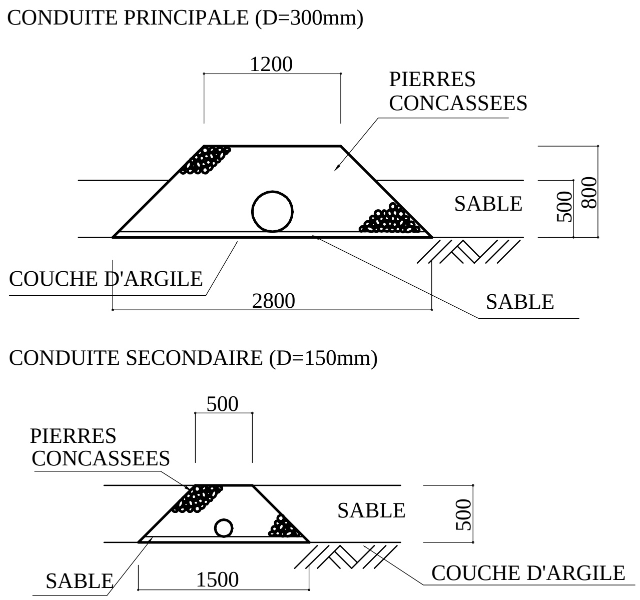
PLAN B-305
DRAINAGE DES EAUX PLUVIALES: SITE DE BENGALE TOROMBI

ECHELLE	1:2000

AGENCE JAPONAISE DE LA COOPERATION INTERNATIONALE



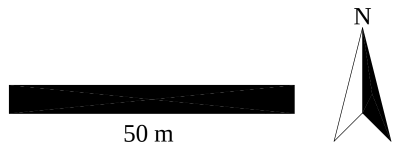
COUPE DE SUPPORT DES CONDUITES (1:50)



LEGENDE

CONDUITE PRINCIPALE D=300mm

CONDUITE SECONDAIRE D=150mm



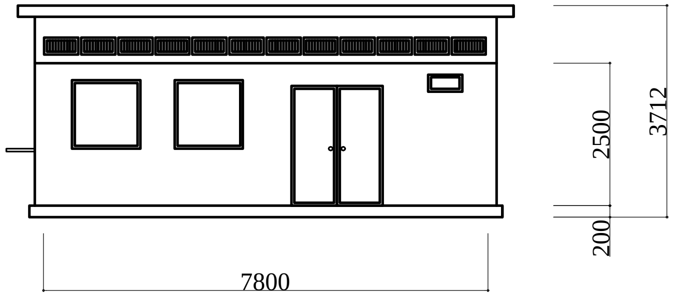
ETUDE SUR L'AMELIORATION DE L'ASSAINISSEMENT
DE LA VILLE DE NIAMEY EN REPUBLIQUE DU NIGER

PLAN B-306
SYSTEME DE DRAINAGE DE LIXIVIAT:
SITE DE BENGALE TOROMBI

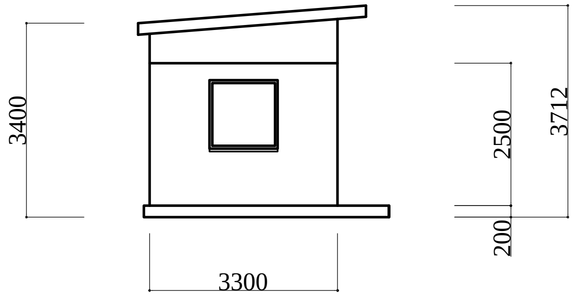
ECHELLE	1:1000

AGENCE JAPONAISE DE LA COOPERATION INTERNATIONALE

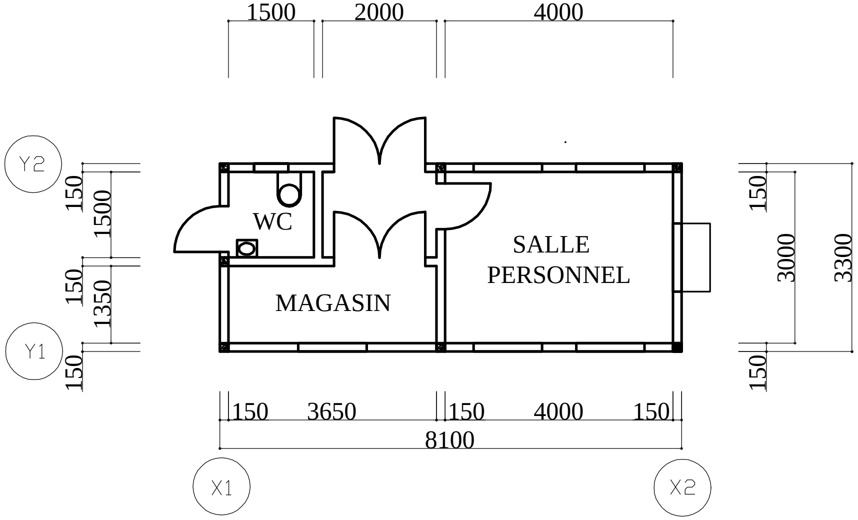
NIVEAU Y2



NIVEAU X2



PLAN



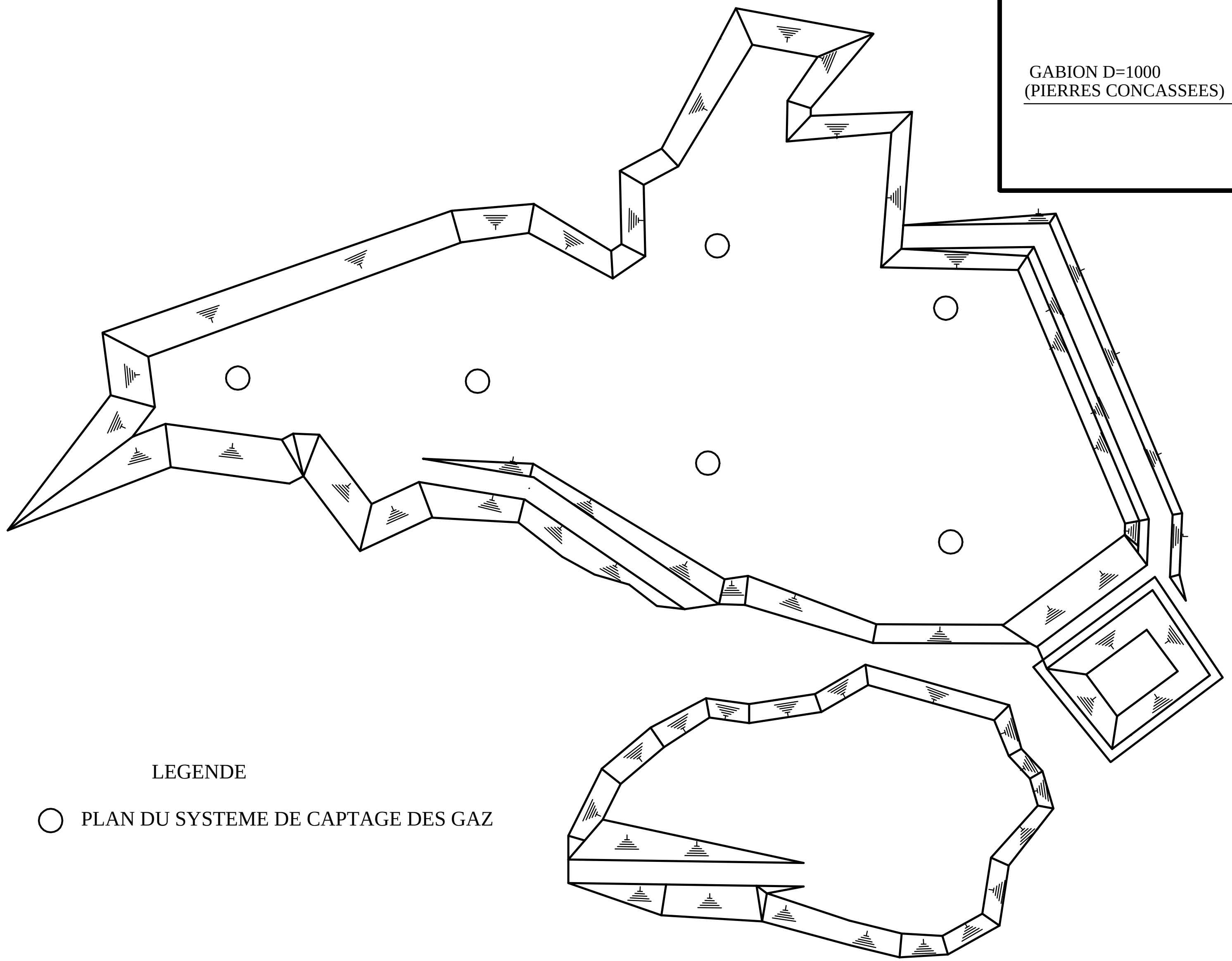
2m

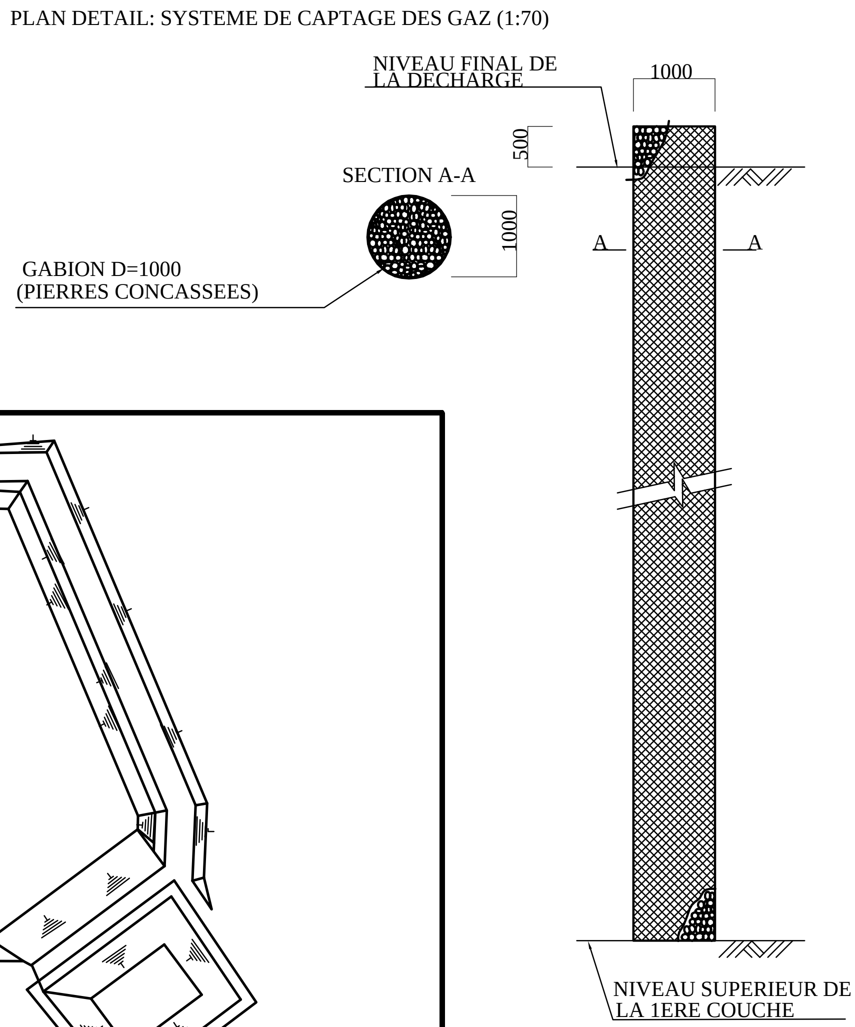
ETUDE SUR L'AMELIORATION DE L'ASSAINISSEMENT
DE LA VILLE DE NIAMEY EN REPUBLIQUE DU NIGER

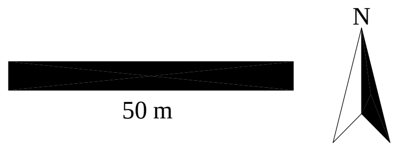
PLAN B-307
BATIMENT ADMINISTRATIF:
SITE DE BENGALE TOROMBI

ECHELLE	1:100

AGENCE JAPONAISE DE LA COOPERATION INTERNATIONALE







LEGENDE

○ PLAN DU SYSTEME DE CAPTAGE DES GAZ

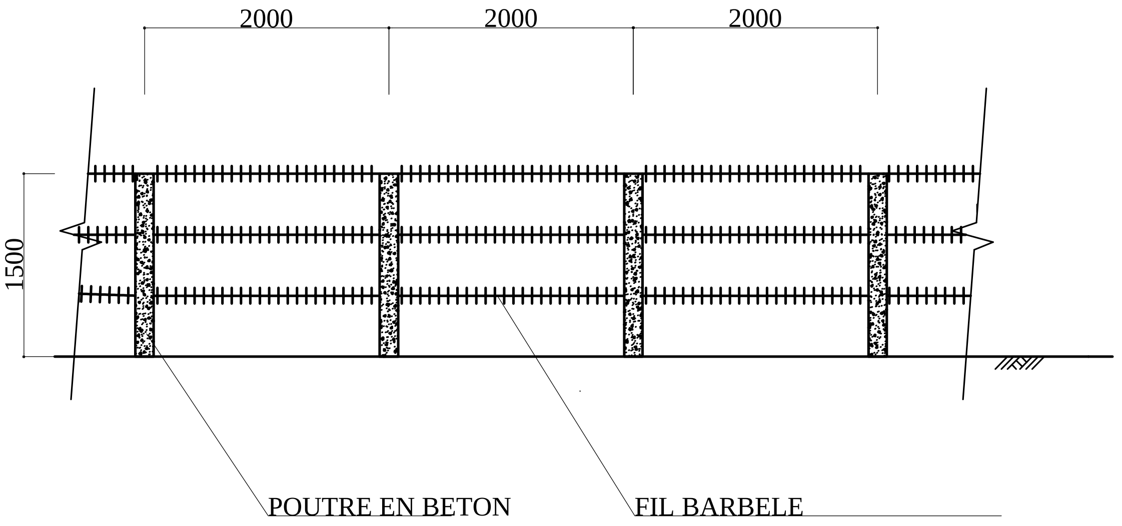
ETUDE SUR L'AMELIORATION DE L'ASSAINISSEMENT
DE LA VILLE DE NIAMEY EN REPUBLIQUE DU NIGER

PLAN B-308
PRINCIPE DU SYSTEME DE
CAPTAGE DES GAZ:
SITE DE BENGALE TOROMBI

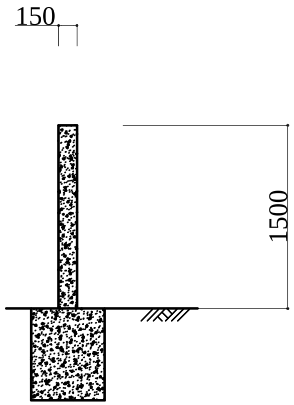
ECHELLE	1:1000

AGENCE JAPONAISE DE LA COOPERATION INTERNATIONALE

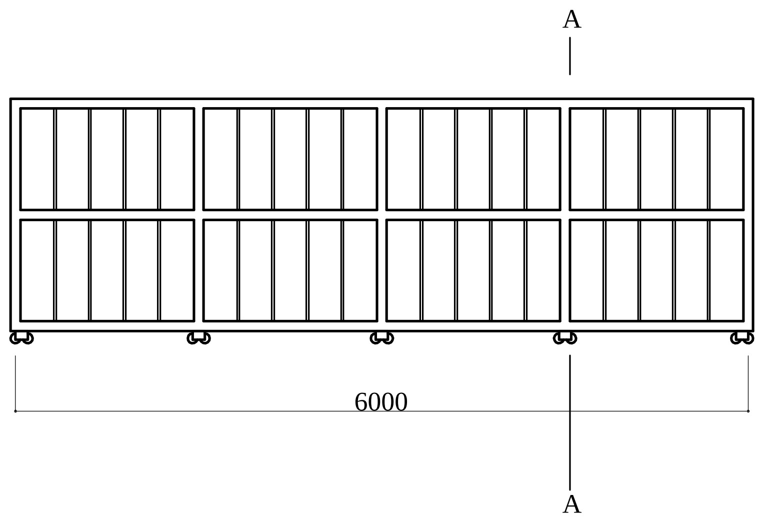
CLOTURE



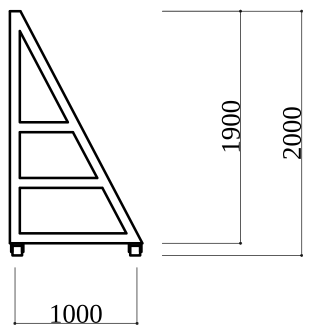
PLAN DE LA POUTRE

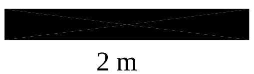


PORTAIL



SECTION A-A





ETUDE SUR L'AMELIORATION DE L'ASSAINISSEMENT DE LA VILLE DE NIAMEY EN REPUBLIQUE DU NIGER	
PLAN B-309 PLAN DU PORTAIL ET DE LA CLOTURE: SITE DE BENGALE TOROMBI	
ECHELLE	1:50
AGENCE JAPONAISE DE LA COOPERATION INTERNATIONALE	