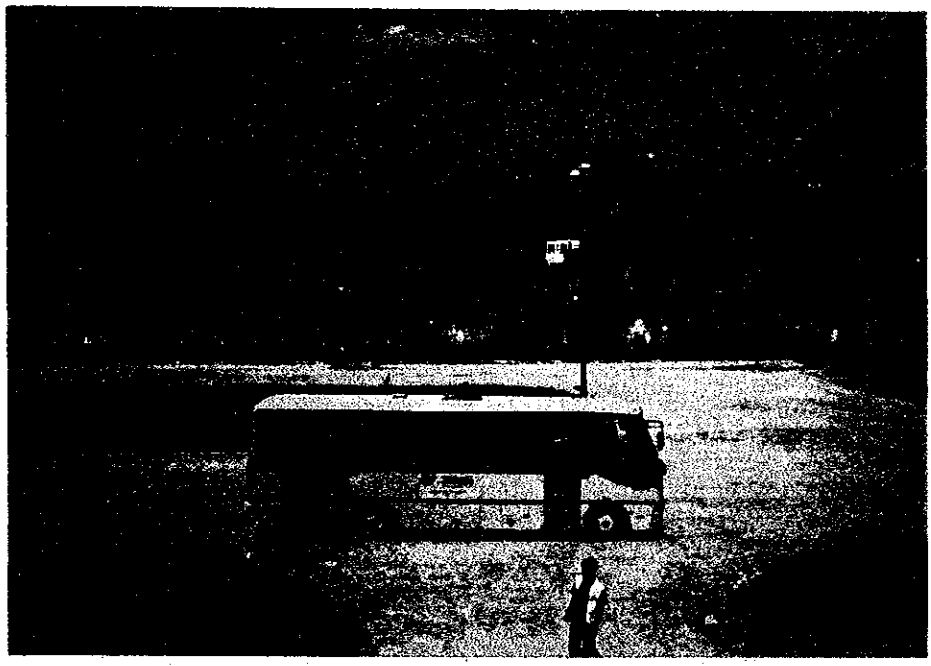
M. DRAWING LISTS FOR PRELIMINARY DESIGN



THE FEASIBILITY STUDY
ON THE
WASTEWATER TREATMENT PLANT
OF SARAJEVO

PRELIMINARY DESIGN DRAWINGS

NOVEMBER 1999

JAPAN INTERNATIONAL COOPERATION AGENCY

DRAWING LISTS FOR PRELIMINARY DESIGN

GENERAL

G-0 DRAWING LIST
G-1 EXISTING SITE PLAN
G-2 PROPOSED SITE PLAN – YEAR 2000
G-3 PROPOSED SITE PLAN – YEAR 2015
G-4 PROCESS SCHEMATIC
G-5 PROCESS SCHEMATIC 2 (BIOGAS)
G-6 PROCESS BALANCE SHEET – FLOW RATES
G-7 PROCESS BALANCE SHEET – SUSPENDED SOLIDS
G-8 PROCESS BALANCE SHEET – BOD5

CIVIL WORK

C-1 HYDRAULIC PROFILE (WATER TREATMENT)
C-2 HYDRAULIC PROFILE (RETURN SLUDGE)
C-3 PRE-TREATMENT & PRE-SCREENING
C-4 SITE SEWERAGE/DRAINAGE PLAN

ARCHITECTURAL WORK

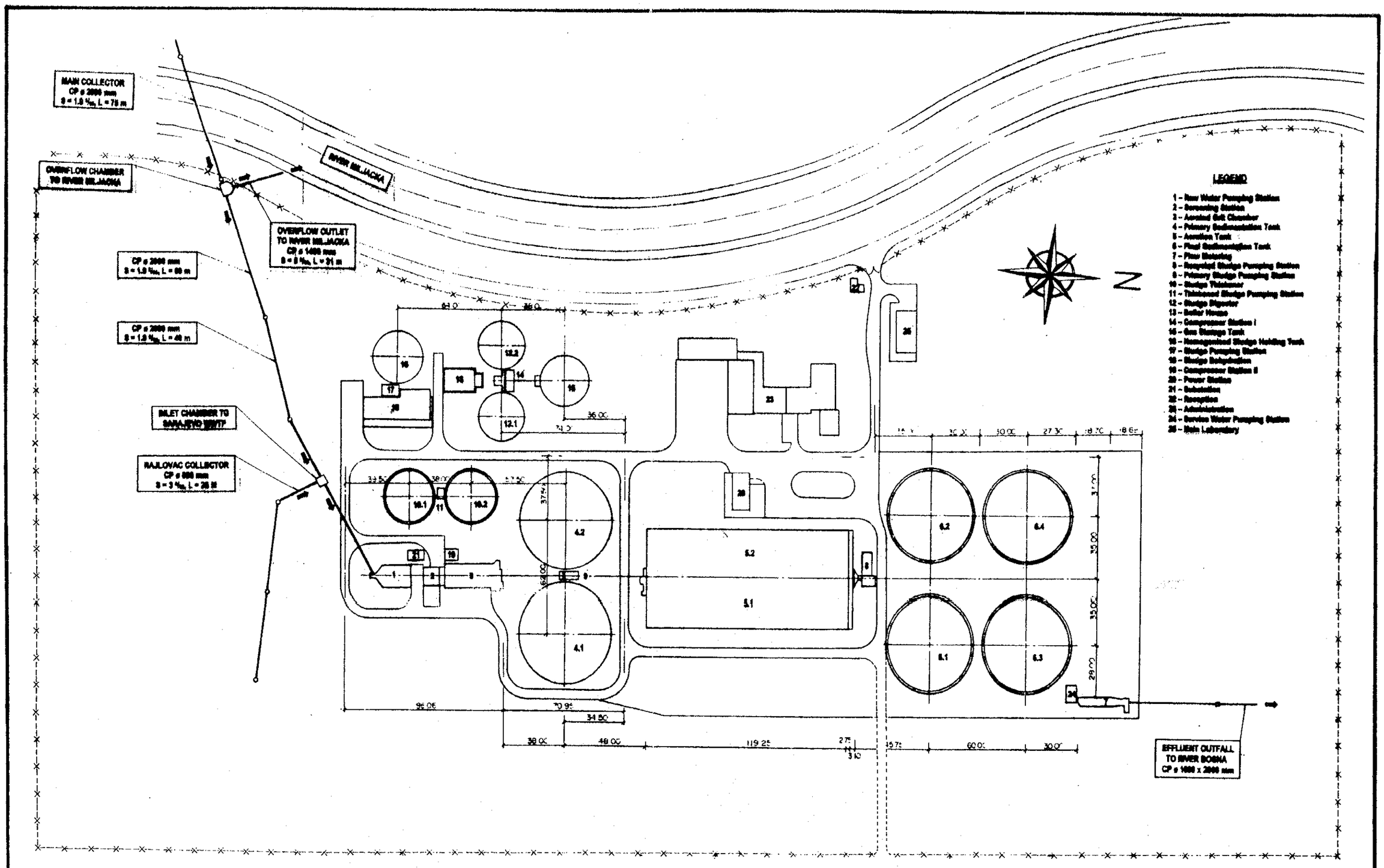
A-1 PRE TREATMENT (PLAN) & PRE SCREENING (PLAN)
A-2 PRE TREATMENT (SECTION) & PRE SCREENING (SECTION)
A-3 RAW WATER PUMPING STATION (PLAN) & SCREENING STATION (PLAN)
A-4 RECYCLED SLUDGE PUMPING STATION (PLAN)
A-5 PRIMARY SLUDGE PUMPING STATION (PLAN)
A-6 THICKENED SLUDGE PUMPING STATION (PLAN)
A-7 BOILER & ENGINE GENERATOR ROOM (PLAN)
A-8 BOILER & ENGINE GENERATOR ROOM (SECTION)
A-9 BOILER HOUSE (PLAN)
A-10 GAS COMPRESSOR STATION (PLAN)
A-11 SLUDGE PUMPING STATION (PLAN) & SLUDGE DEHYDRATION (PLAN)
A-12 AIR BLOWER ROOM (PLAN)
A-13 POWER STATION (PLAN)
A-14 SUBSTATION (PLAN)
A-15 RECEPTION (PLAN)
A-16 ADMINISTRATION BUILDING (PLAN)-(A) BLOCK-1
A-17 ADMINISTRATION BUILDING (PLAN)-(A) BLOCK-2
A-18 ADMINISTRATION BUILDING (PLAN)-(B) BLOCK
A-19 ADMINISTRATION BUILDING (PLAN)-(C) BLOCK
A-20 SERVICE WATER PUMPING STATION (PLAN)

MECHANICAL WORK

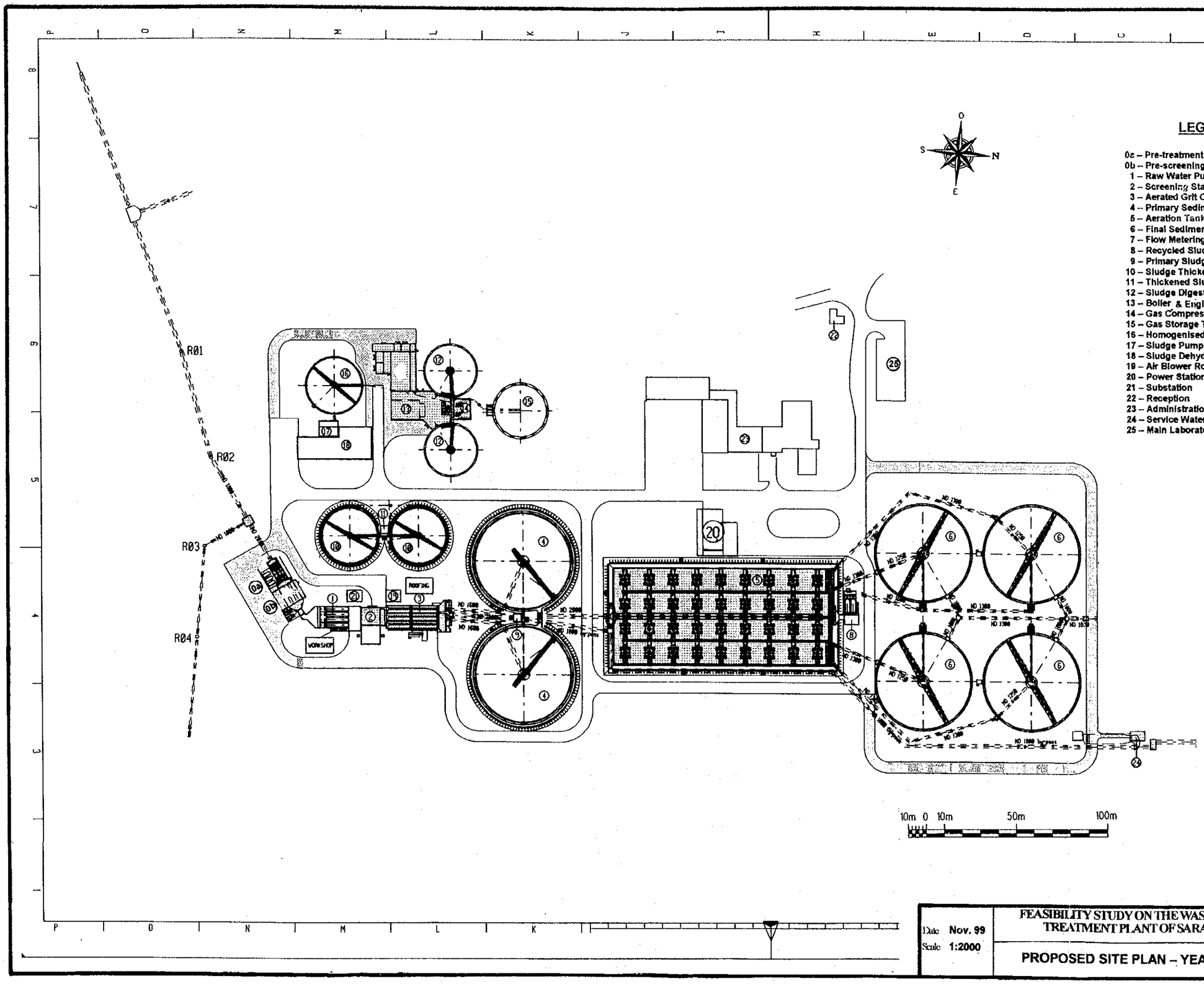
M-1 PLANT INSTALLATION SECTION
M-2 PRE-TREATMENT AND PRE-SCREENING STATION
M-3 SCREENING STATION
M-4 FRESH SLUDGE HYDROCYCLONE
M-5 SERVICE WATER PUMPING STATION
M-6 EFFLUENT CHLORINATION – YEAR 2015

ELECTRICAL WORK

E-1 SINGLE LINE DIAGRAM
E-2 MAIN CABLING - PLAN
E-3 CONTROL SYSTEM DIAGRAM
E-4 INSTRUMENTATION SCHEMATIC DIAGRAM
E-5 LAYOUT PLAN OF ELECTRICAL EQUIPMENT
E-6 ELECTRICAL EQUIPMENT LIST



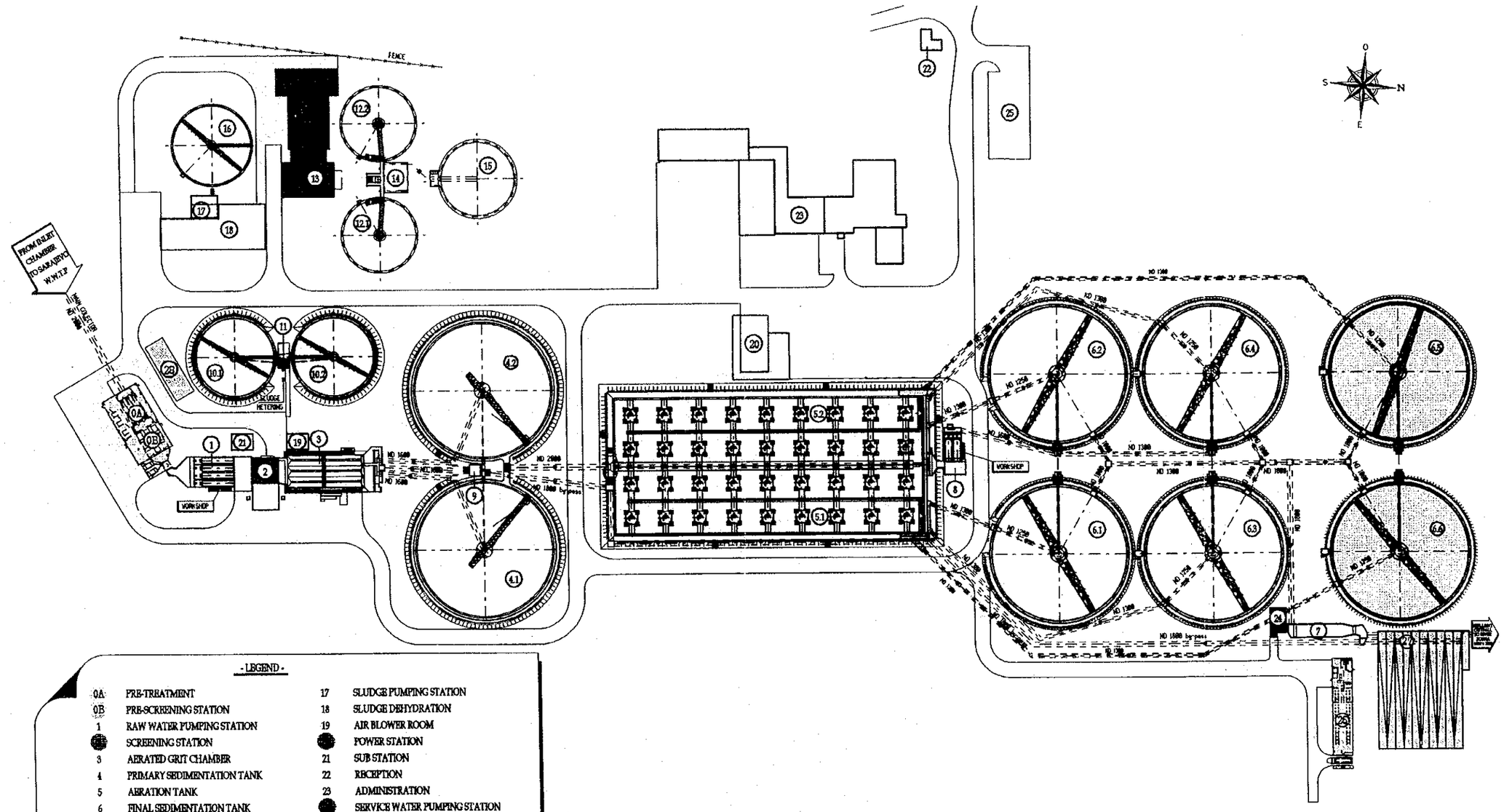
Date : Nov. 1998 Scale : 1:2000	THE FEASIBILITY STUDY ON THE WASTEWATER TREATMENT PLANT OF SARAJEVO	
	EXISTING SITE PLAN	G-1



LEGEND

0a – Pre-treatment
0b – Pre-screening Station
1 – Raw Water Pumping Station
2 – Screening Station
3 – Aerated Grit Chamber
4 – Primary Sedimentation Tank
5 – Aeration Tank
6 – Final Sedimentation Tank
7 – Flow Metering
8 – Recycled Sludge Pumping Station
9 – Primary Sludge Pumping Station
10 – Sludge Thickener
11 – Thickened Sludge Pumping Station
12 – Sludge Digester
13 – Boiler & Engine Generator Room
14 – Gas Compressor Station
15 – Gas Storage Tank
16 – Homogenised Sludge Holding Tank
17 – Sludge Pumping Station
18 – Sludge Dehydration
19 – Air Blower Room
20 – Power Station
21 – Substation
22 – Reception
23 – Administration Building
24 – Service Water Pumping Station
25 – Main Laboratory

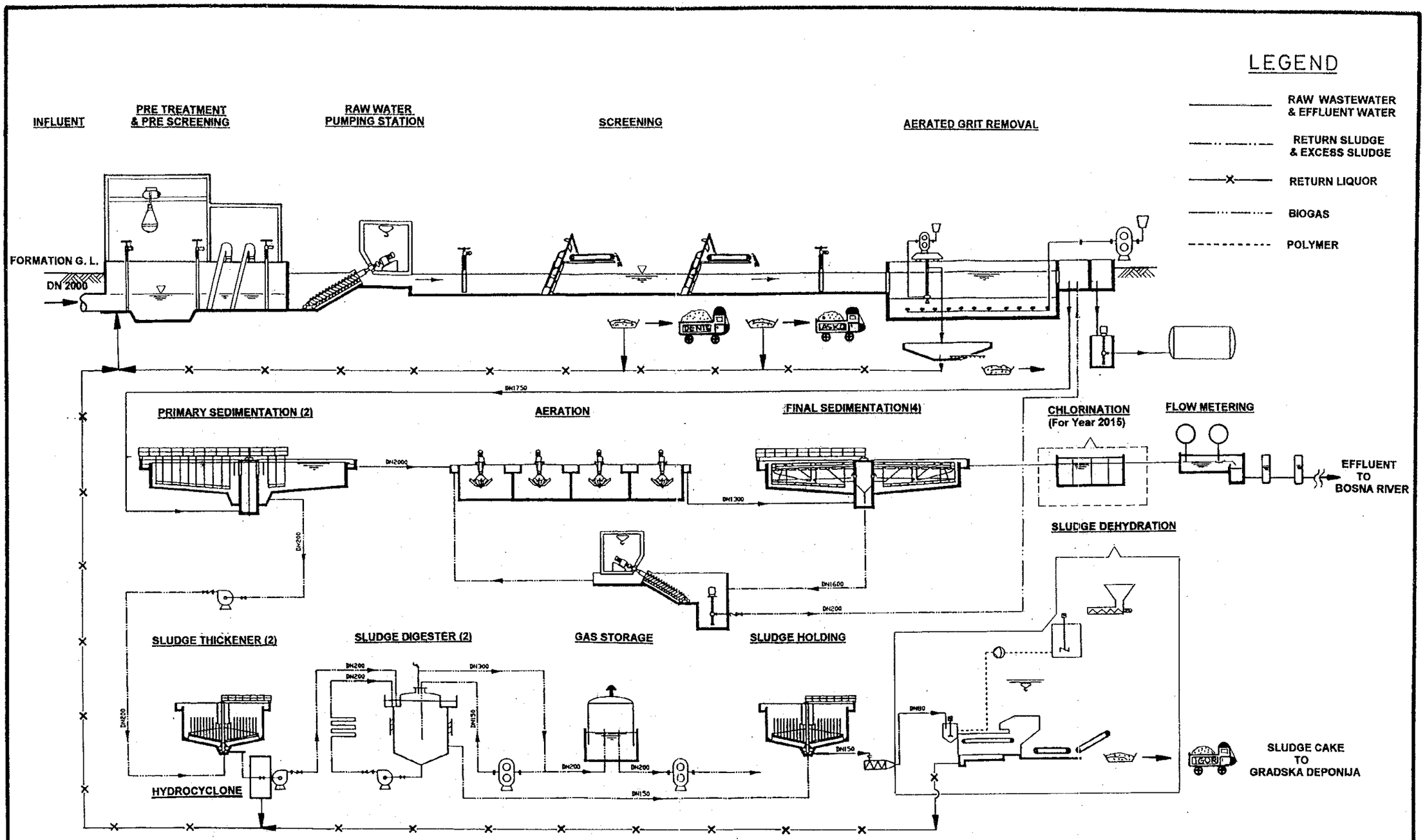
Date Nov. 99 Scale 1:2000	FEASIBILITY STUDY ON THE WASTEWATER TREATMENT PLANT OF SARAJEVO PROPOSED SITE PLAN – YEAR 2000	G-2



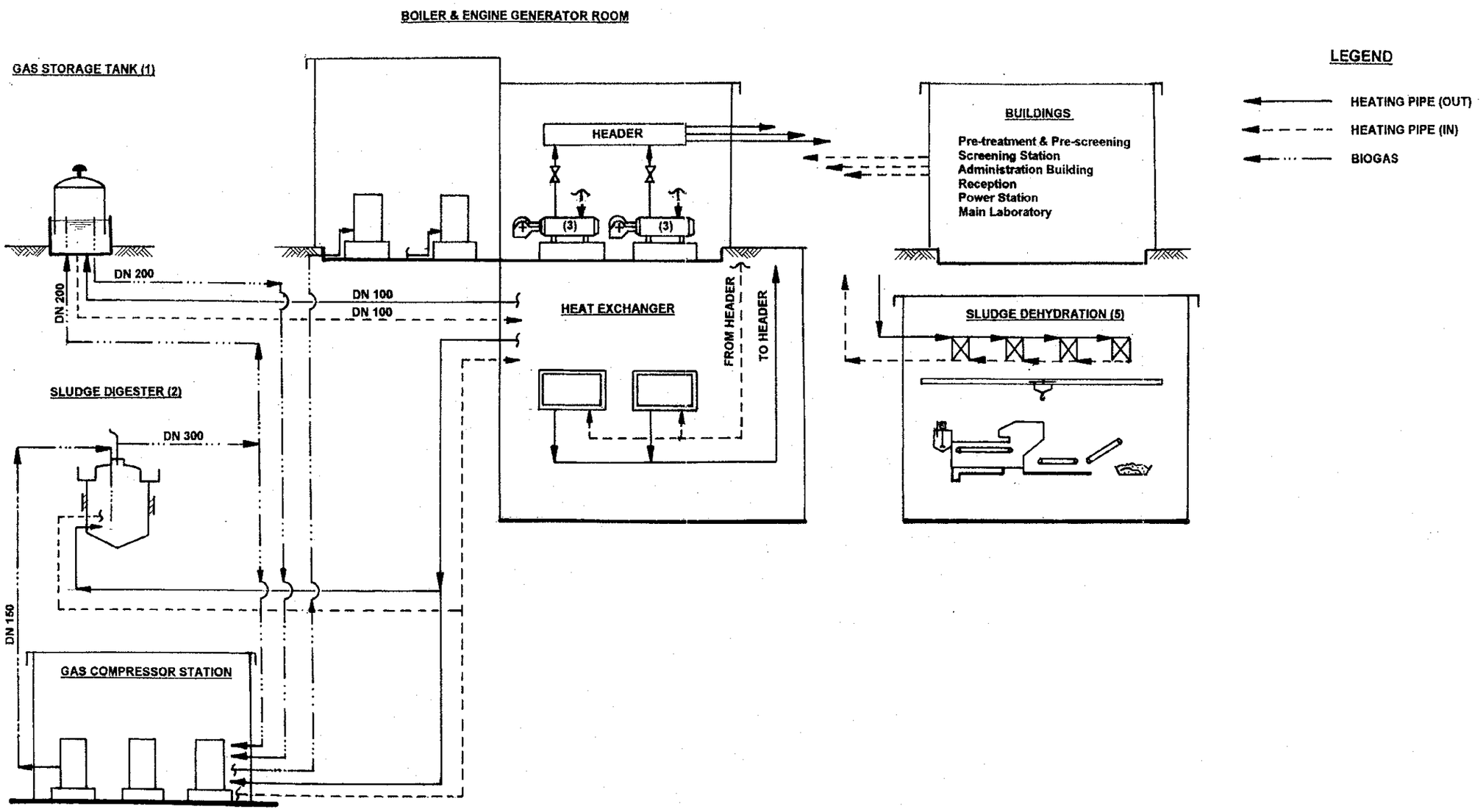
- LEGEND -

0A	PRE-TREATMENT	17	SLUDGE PUMPING STATION
0B	PRE-SCREENING STATION	18	SLUDGE DEHYDRATION
1	RAW WATER PUMPING STATION	19	AIR BLOWER ROOM
●	SCREENING STATION	●	POWER STATION
3	AERATED GRIT CHAMBER	21	SUB STATION
4	PRIMARY SEDIMENTATION TANK	22	RECEPTION
5	AERATION TANK	23	ADMINISTRATION
6	FINAL SEDIMENTATION TANK	●	SERVICE WATER PUMPING STATION
7	FLOW METERING	25	MAIN LABORATORY
8	RECYCLED SLUDGE PUMPING STATION		NEW ROADS
9	PRIMARY SLUDGE PUMPING STATION		EXTENSION YEAR 2015
10	SLUDGE THICKENER		OPTIONS
●	THICKENED SLUDGE PUMPING STATION	26	CHLORINATION BUILDING
12	SLUDGE DIGESTER	27	CHLORINATION TANK
●	BOILER & ENGINE GENERATOR ROOM	28	ODOUR TREATMENT BUILDING
●	GAS COMPRESSOR STATION		
15	GAS STORAGE TANK		
16	HOMOGENISED SLUDGE HOLDING TANK		

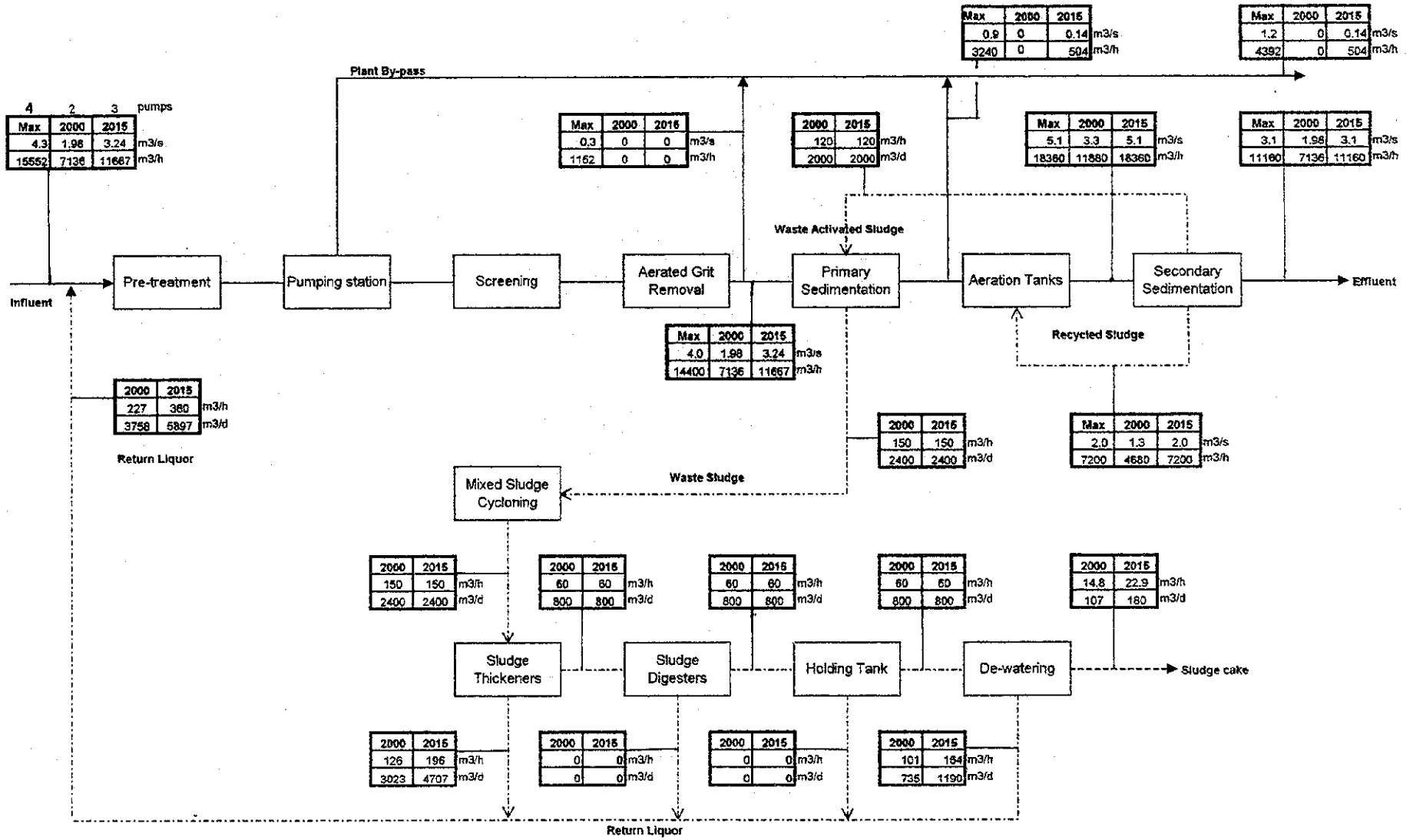
Date : Nov. 99 Scale: As shown	THE FEASIBILITY STUDY ON THE WASTEWATER TREATMENT PLANT OF SARAJEVO PROPOSED SITE PLAN – YEAR 2015	G-3



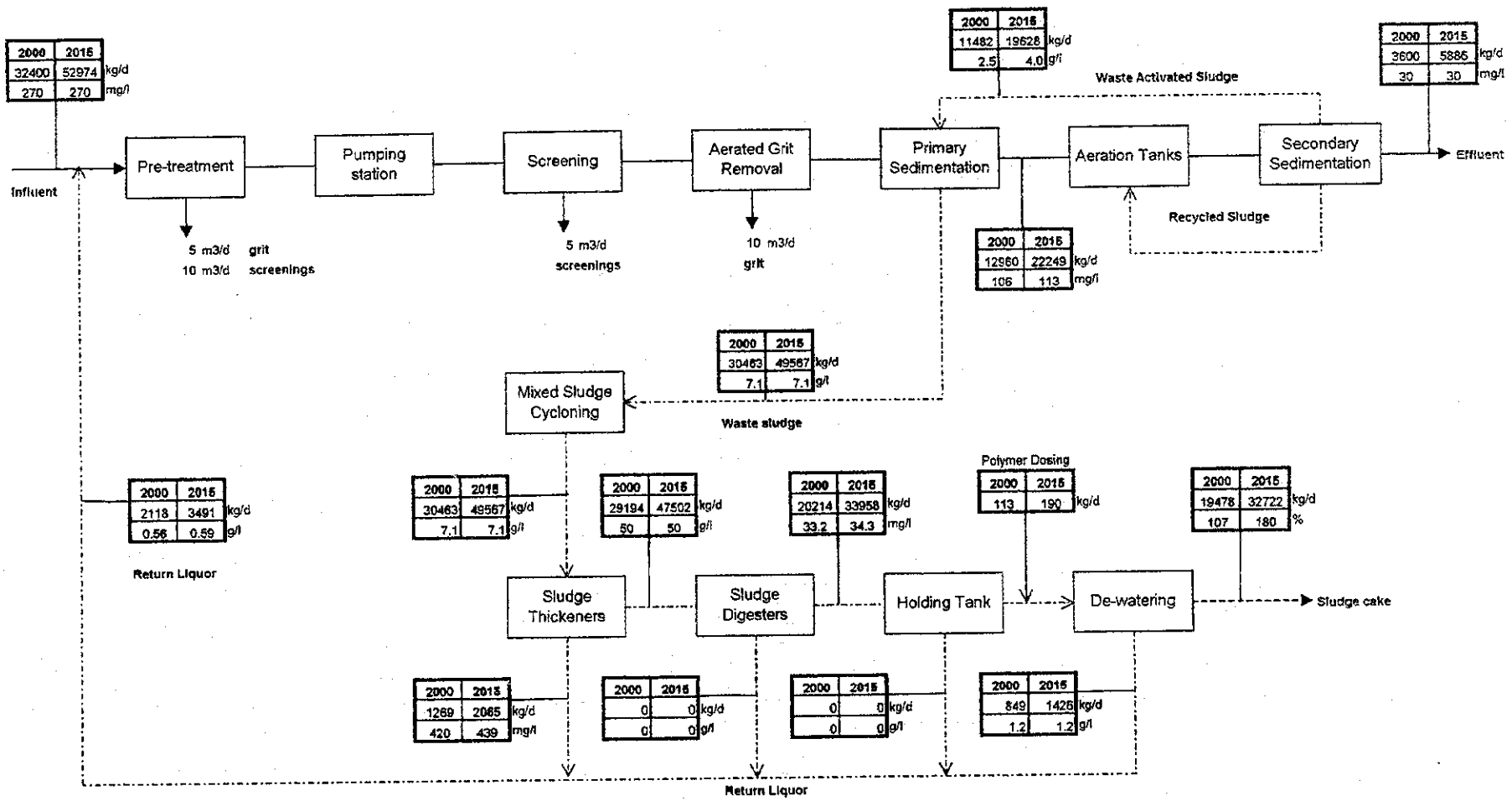
Date : Nov. 1999 Scale : Not to Scale	THE FEASIBILITY STUDY ON THE WASTEWATER TREATMENT PLANT OF SARAJEVO PROCESS SCHEMATIC	G-4



Date : Nov. 99 Scale: Not to Scale	THE FEASIBILITY STUDY ON THE WASTEWATER TREATMENT PLANT OF SARAJEVO	
	PROCESS SCHEMATIC 2 (BIOGAS)	G-5

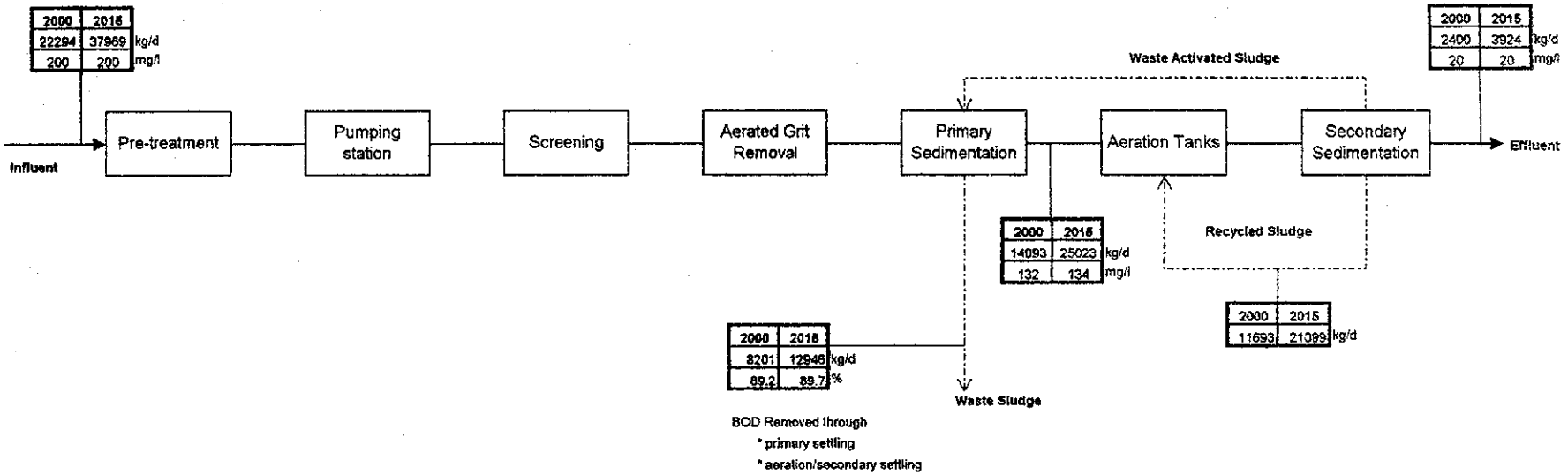


Date : Nov. 99 Scale: Not to Scale	THE FEASIBILITY STUDY ON THE WASTEWATER TREATMENT PLANT OF SARAJEVO	
	PROCESS BALANCE SHEET – FLOW RATES	G – 6



Date : Nov. 99 Scale: Not to Scale	THE FEASIBILITY STUDY ON THE WASTEWATER TREATMENT PLANT OF SARAJEVO	
	PROCESS BALANCE SHEET – SUSPENDED SOLIDS	G – 7

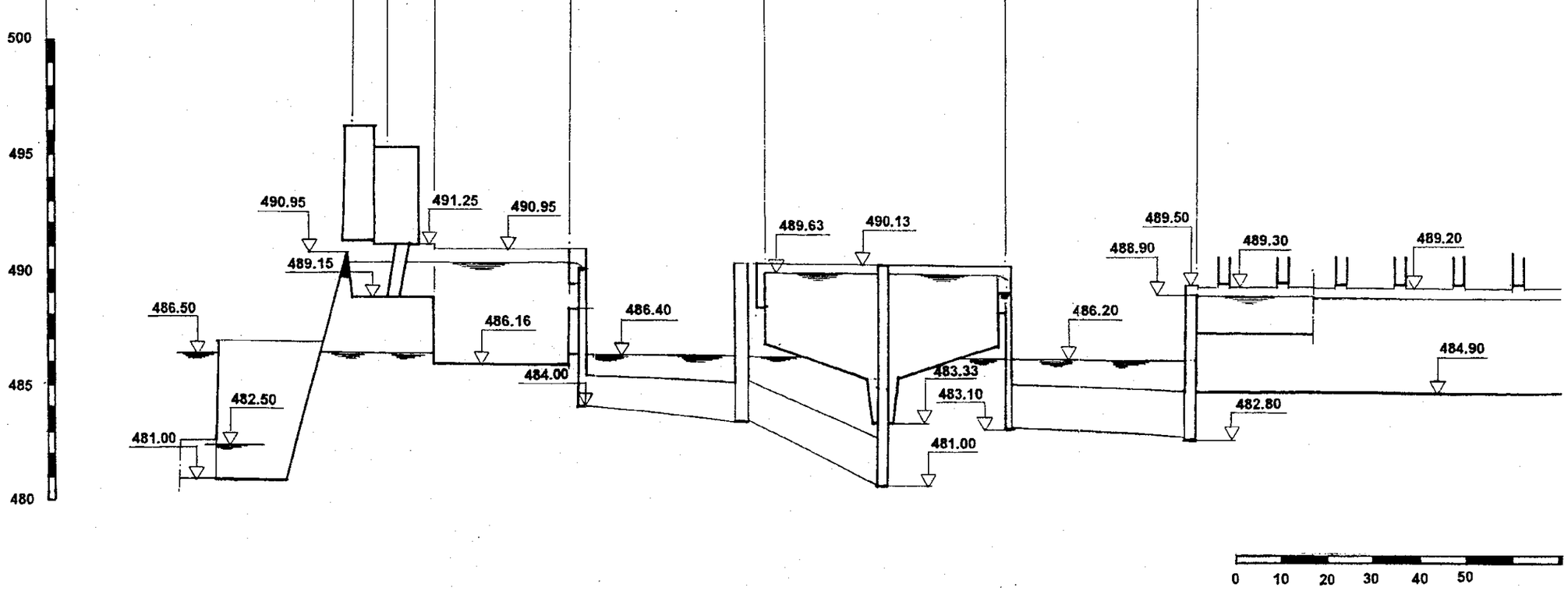
M-8



Date : Nov. 99 Scale: Not to Scale	THE FEASIBILITY STUDY ON THE WASTEWATER TREATMENT PLANT OF SARAJEVO	
	PROCESS BALANCE SHEET – BOD_5	G-8

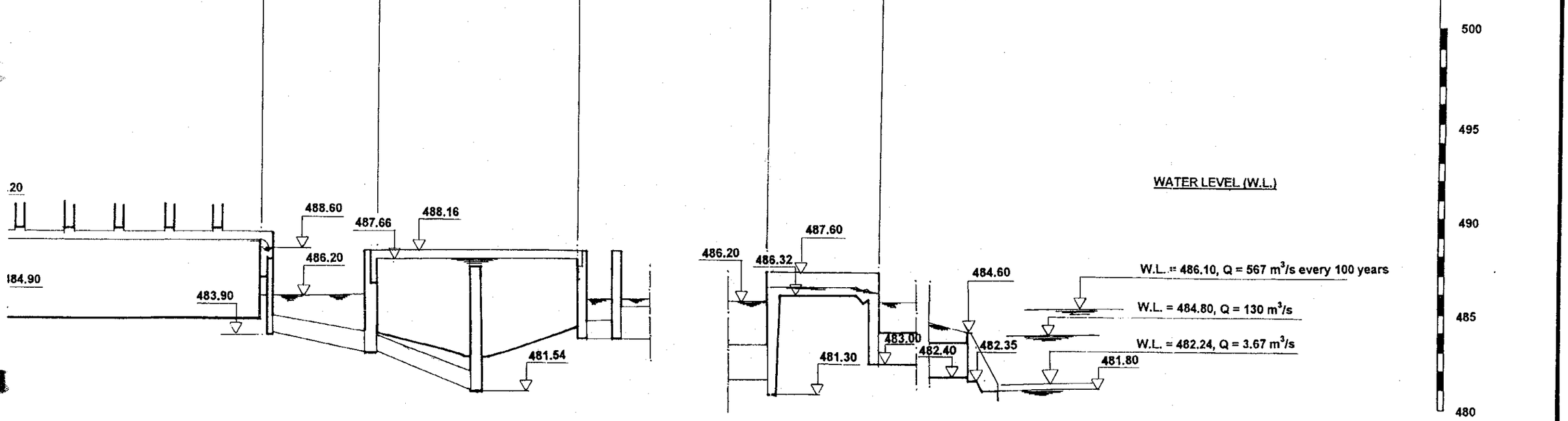
M-9

		RAW WATER PUMPING STATION	SCREENING STATION	AERATED GRIT CHAMBER		PRIMARY SEDIMENTATION TANK		AERATION TANK
Q = 2.6 m^3/s (3 Screens)	PHASE 1	NORMAL WATER LEVEL	490.39	490.28		489.67		488.70
Q = 3.55 m3/s Siphon = 0.47 m3/s 1 Final Sedimentation Tank Out of Service		MAXIMUM WATER LEVEL	490.53	490.36		489.68		488.70



ATION TANK | FINAL SEDIMENTATION TANK | FLOW METERING | OUTFALL WORK

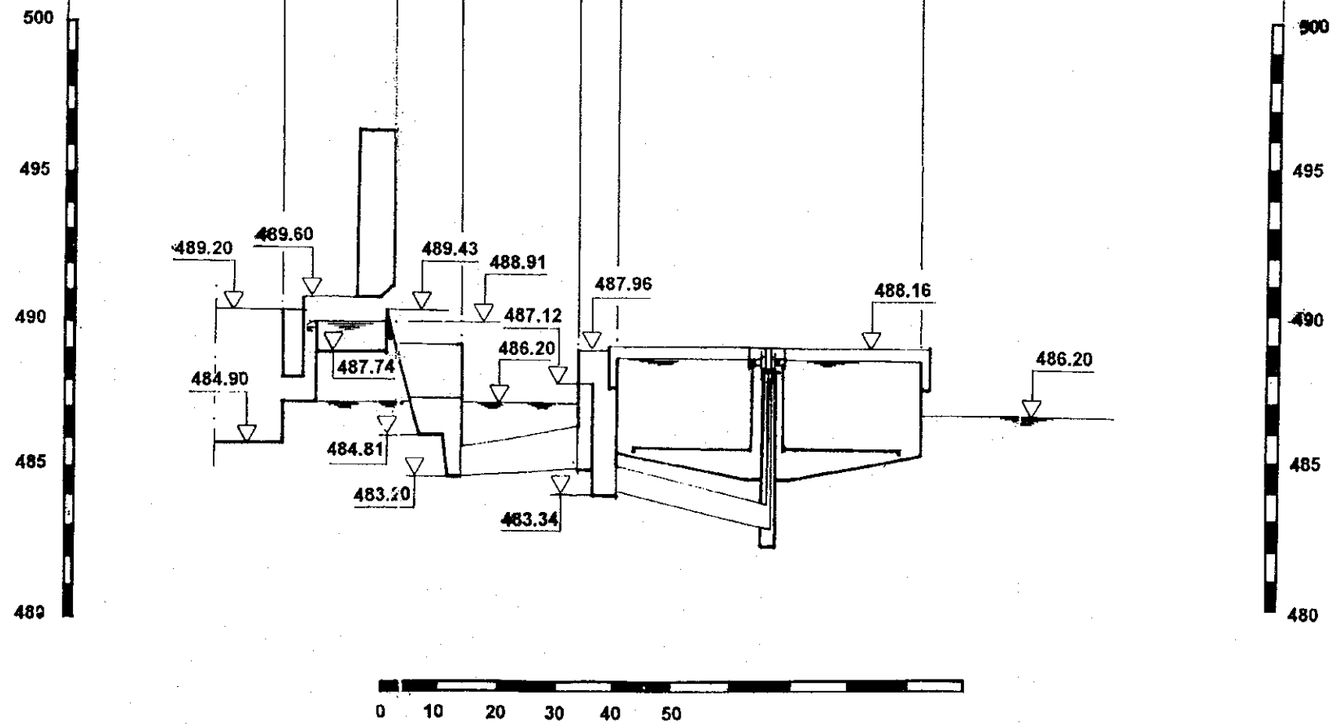
488.70		487.69		486.84	
488.70		487.70		486.90	



Date : Nov. 1999 Scale : As shown	THE FEASIBILITY STUDY ON THE WASTEWATER TREATMENT PLANT OF SARAJEVO HYDRAULIC PROFILE – WATER TREATMENT	C-1

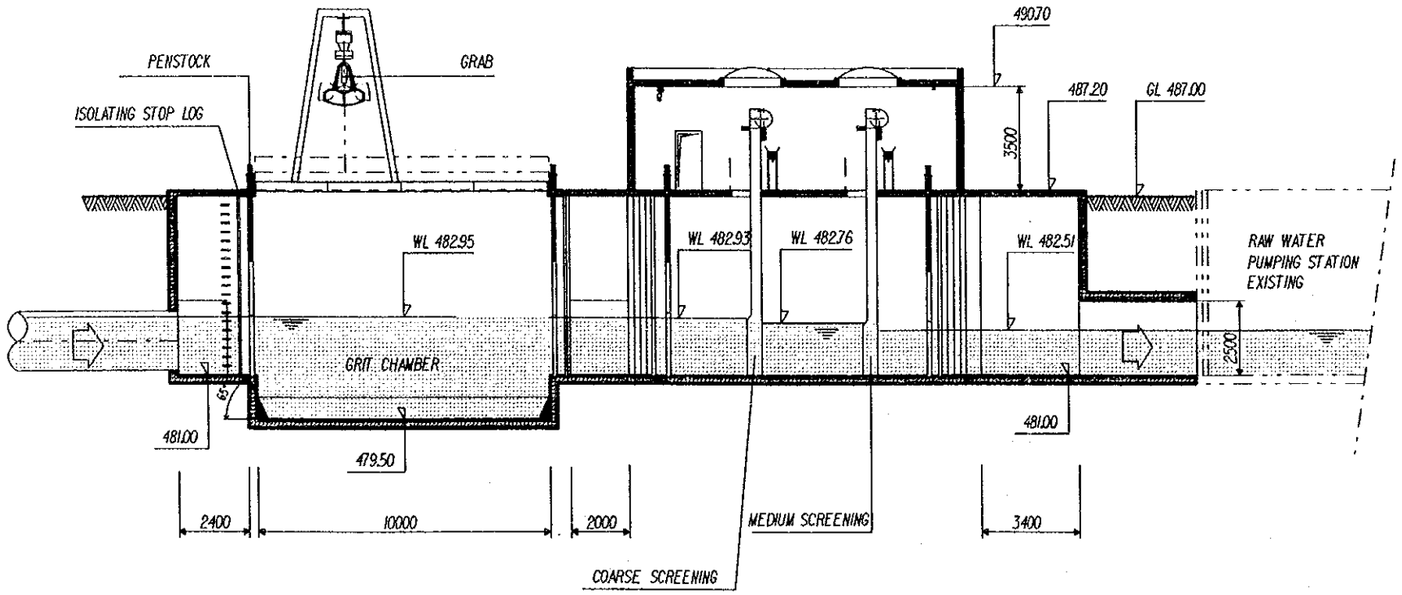
AERATION TANK | RETURN SLUDGE PUMPING STATION | FINAL SEDIMENTATION TANK

RETURN SLUDGE = 1.5 m^3/s		489.13	486.47			487.69	
RETURN SLUDGE = 2.0 m^3/s		489.18	486.47			487.69	

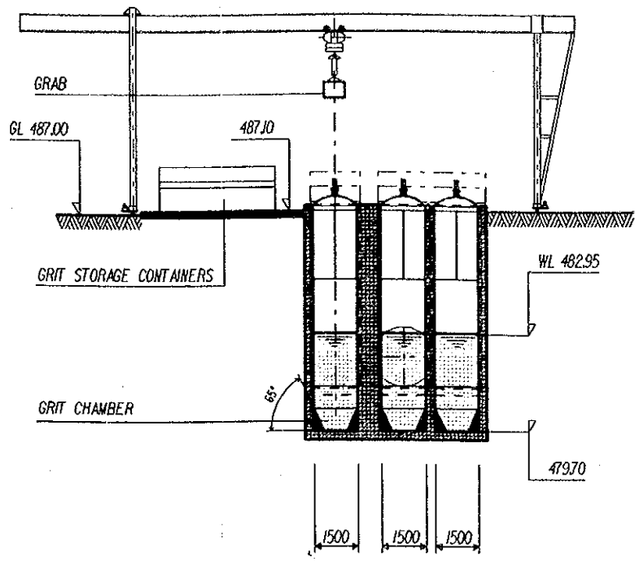


Date : Nov. 1999 Scale : As shown	THE FEASIBILITY STUDY ON THE WASTEWATER TREATMENT PLANT OF SARAJEVO	C-2
	HYDRAULIC PROFILE – RETURN SLUDGE	

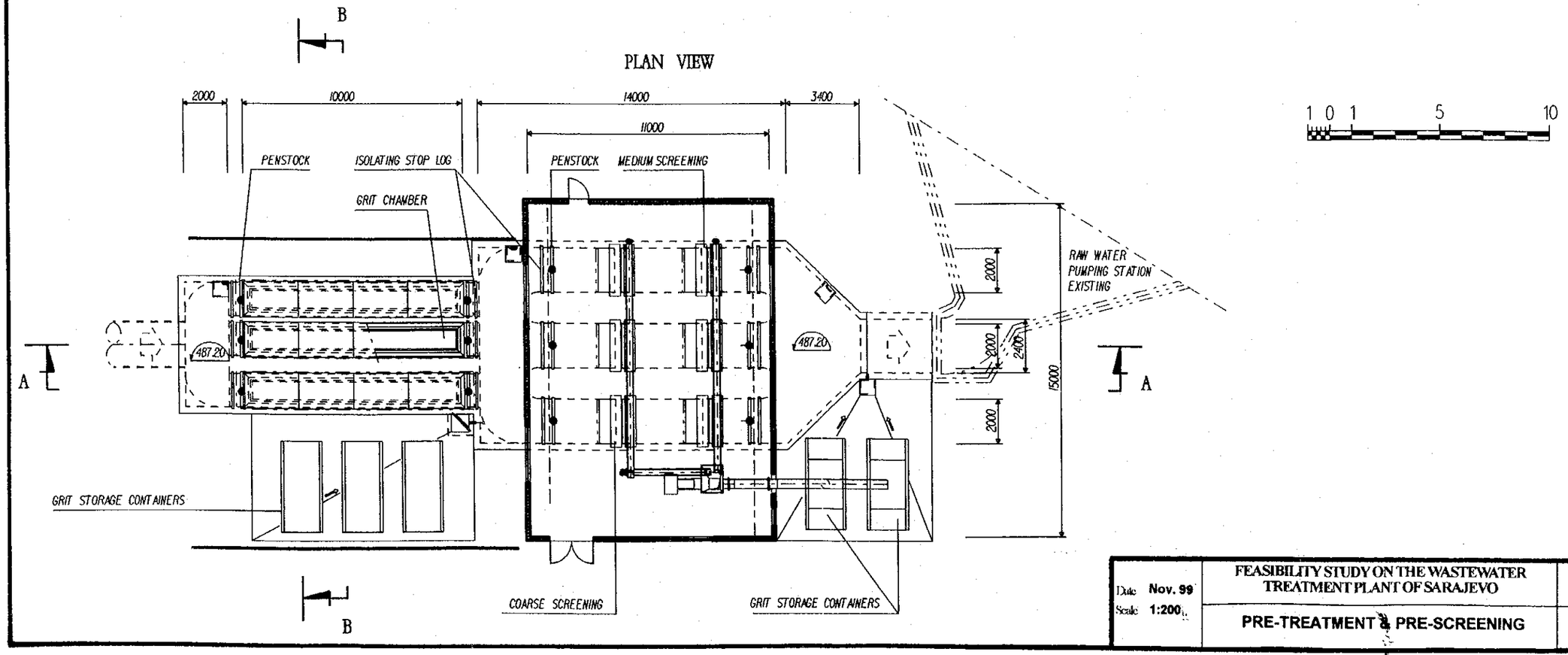
SECTION -AA-



SECTION -BB-



PLAN VIEW



Date Nov. 99 Scale 1:200	FEASIBILITY STUDY ON THE WASTEWATER TREATMENT PLANT OF SARAJEVO PRE-TREATMENT & PRE-SCREENING	C-3

RIVER MILJACKA

R01

R02

R03

R04

O
S
N
E

LEGEND

0A – Pre-treatment
0B – Pre-screening Station
1 – Raw Water Pumping Station
2 – Screening Station
3 – Aerated Grit Chamber
4 – Primary Sedimentation Tank
5 – Aeration Tank
6 – Final Sedimentation Tank
7 – Flow Metering
8 – Recycled Sludge Pumping Station
9 – Primary Sludge Pumping Station
10 – Sludge Thickener
11 – Thickened Sludge Pumping Station
12 – Sludge Digester
13 – Boiler & Engine Generator Room
14 – Gas Compressor Station
15 – Gas Storage Tank
16 – Homogenised Sludge Holding Tank
17 – Sludge Pumping Station
18 – Sludge Dehydration
19 – Air Blower Room
20 – Power Station
21 – Substation
22 – Reception
23 – Administration Building
24 – Service Water Pumping Station
25 – Main Laboratory

PROPOSED NEW COMBINED SEWER (Total Length = 205 m)

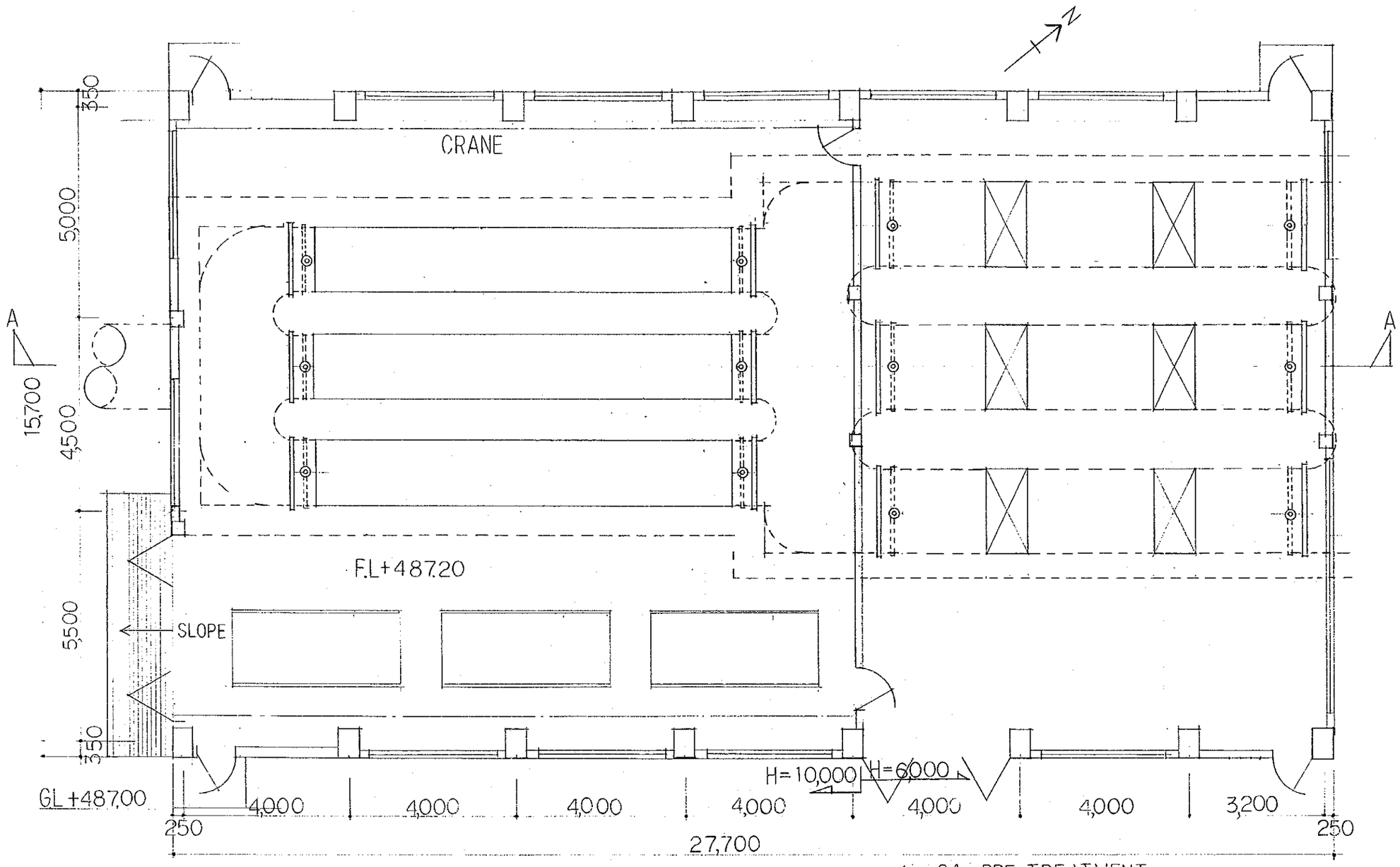
EXISTING COMBINED SEWER (To be Upgraded, Length = 117 m)

EXISTING COMBINED SEWER (To be Abandoned)

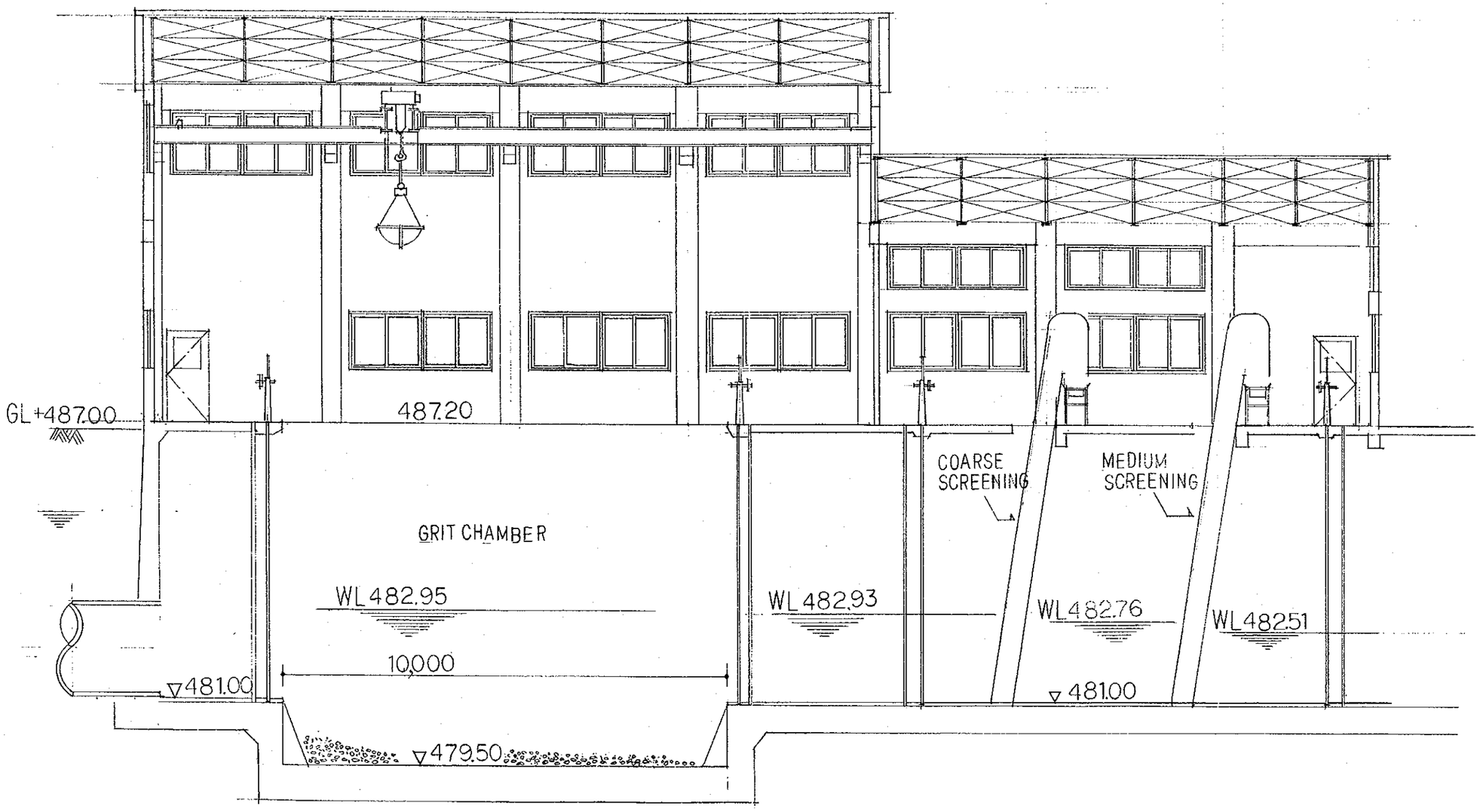
SEWER LINE NUMBER (Details, See Table

10m 0 10m 50m 100m

Date : Nov. 99 Scale: 1: 2000	FEASIBILITY STUDY ON THE WASTEWATER TREATMENT PLANT OF SARAJEVO	
	SITE SEWERAGE/DRAINAGE PLAN	C – 4



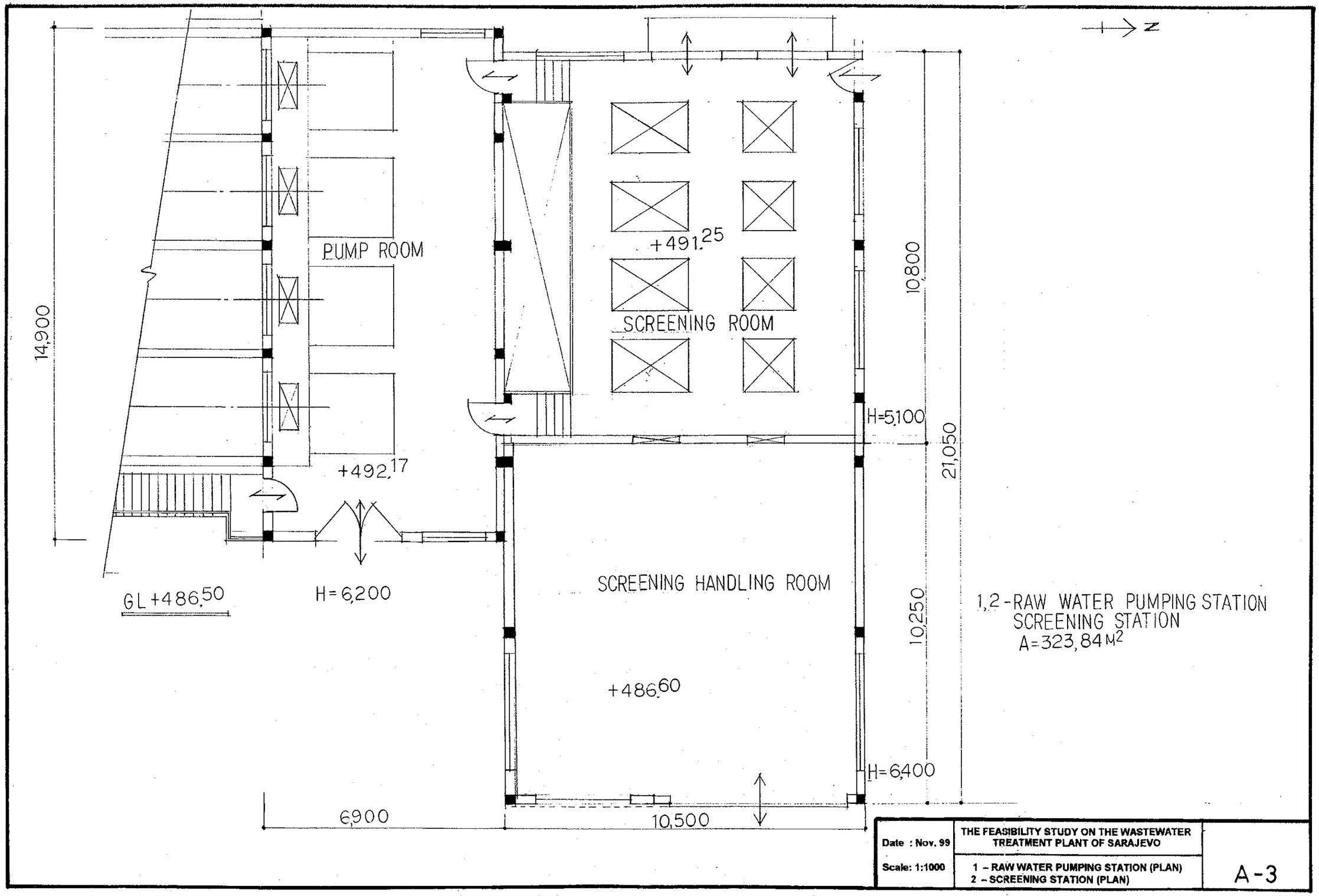
Date : Nov. 99	THE FEASIBILITY STUDY ON THE WASTEWATER TREATMENT PLANT OF SARAJEVO	
Scale: 1:1000	0A – PRE TREATMENT (PLAN) * NEW 0B – PRE SCREENING (PLAN) BUILDING	A-1



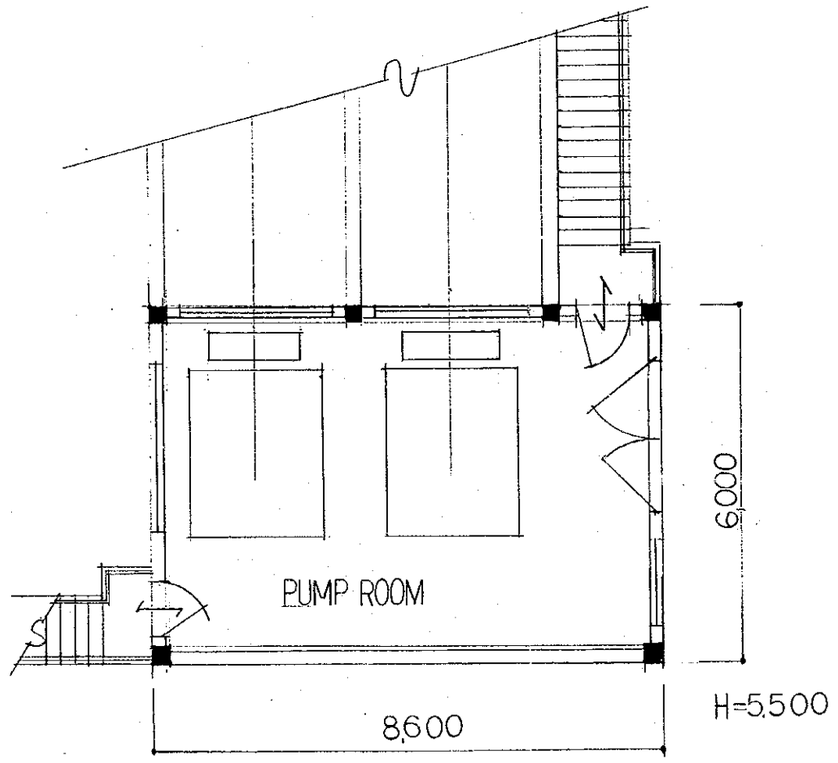
A-A SECTION

0A-PRE TREATMENT
0B-PRE SCREENING
☆ NEW BUILDING

Date : Nov. 99	THE FEASIBILITY STUDY ON THE WASTEWATER TREATMENT PLANT OF SARAJEVO	
Scale: 1:1000	0A – PRE TREATMENT (SECTION) * NEW 0B – PRE SCREENING (SECTION) BUILDING	A-2

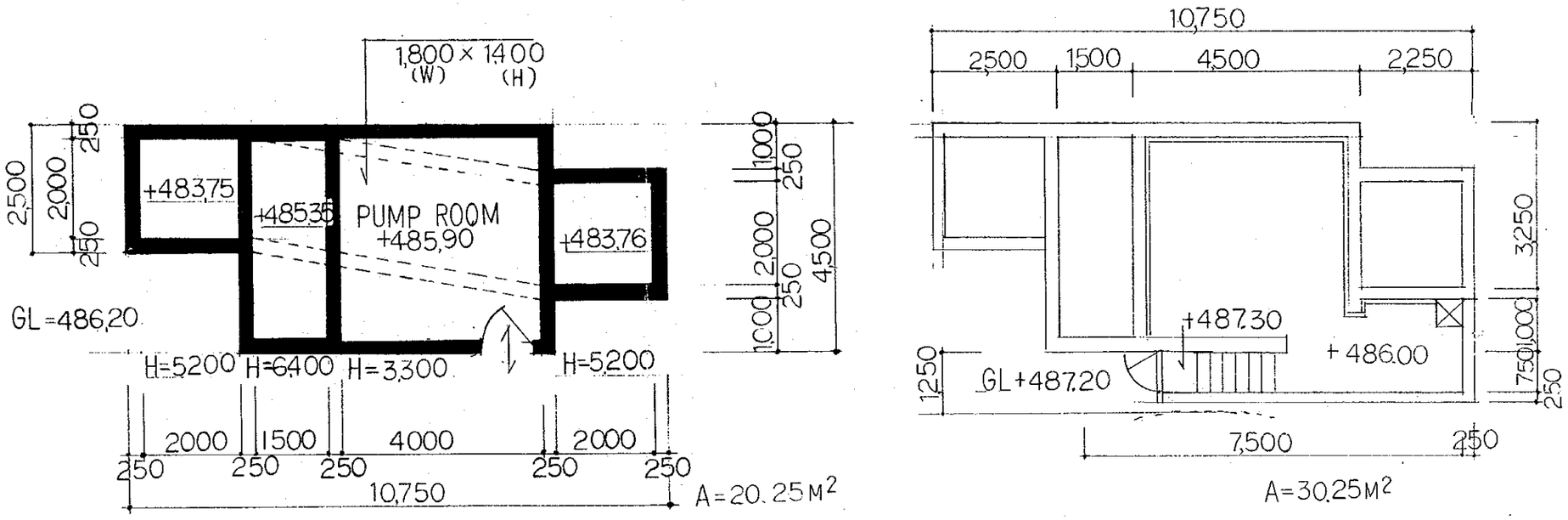

N
PUMP ROOM
14,900
+491.25
SCREENING ROOM
10,800
H=5,100
21,050
+492.17
GL +486.50
H=6,200
SCREENING HANDLING ROOM
+486.60
10,250
1,2 - RAW WATER PUMPING STATION
SCREENING STATION
A=323,84 M2
H=6,400
6,900
10,500
Date : Nov. 99
THE FEASIBILITY STUDY ON THE WASTEWATER TREATMENT PLANT OF SARAJEVO
Scale: 1:1000
1 – RAW WATER PUMPING STATION (PLAN)
2 – SCREENING STATION (PLAN)
A-3

N



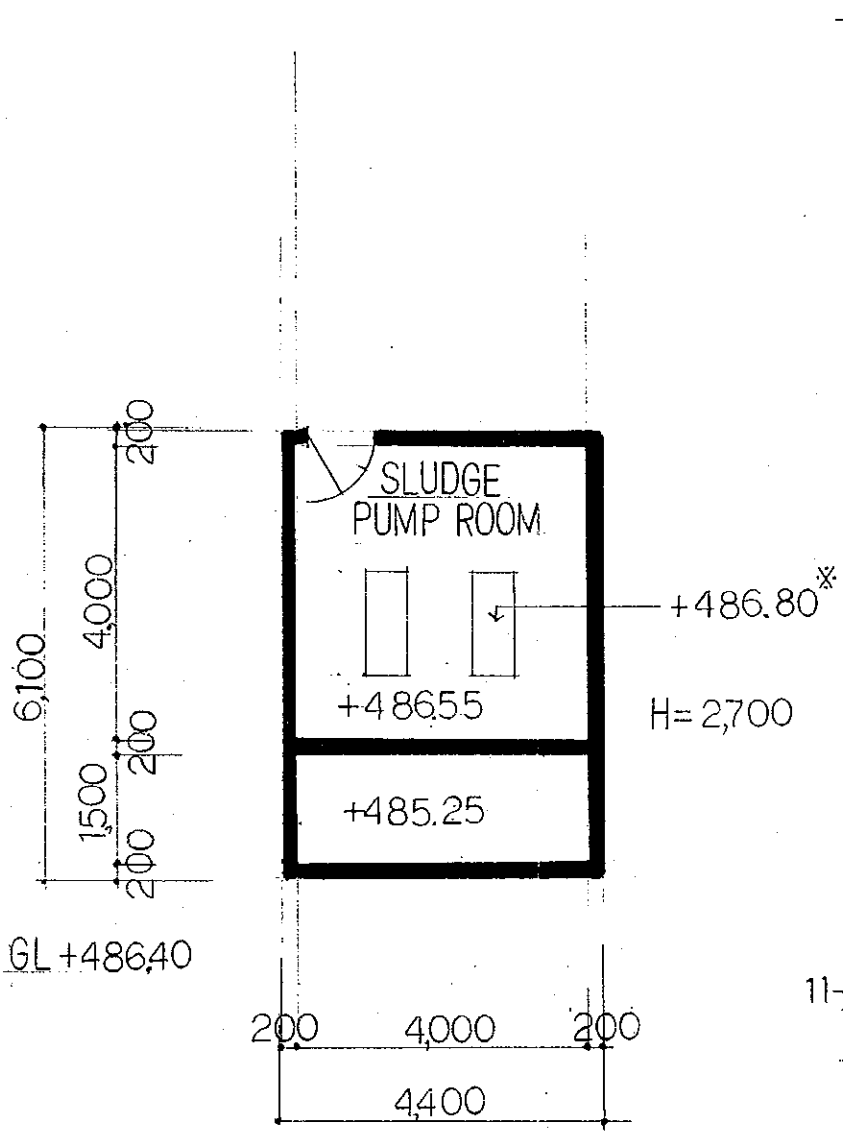
8- RECYCLING SLUDGE PUMPING STATION
A = 51,6 M2

Date : Nov. 99	THE FEASIBILITY STUDY ON THE WASTEWATER TREATMENT PLANT OF SARAJEVO	A-4
Scale: 1:1000	8 – RECYCLED SLUDGE PUMPING STATION (PLAN)	



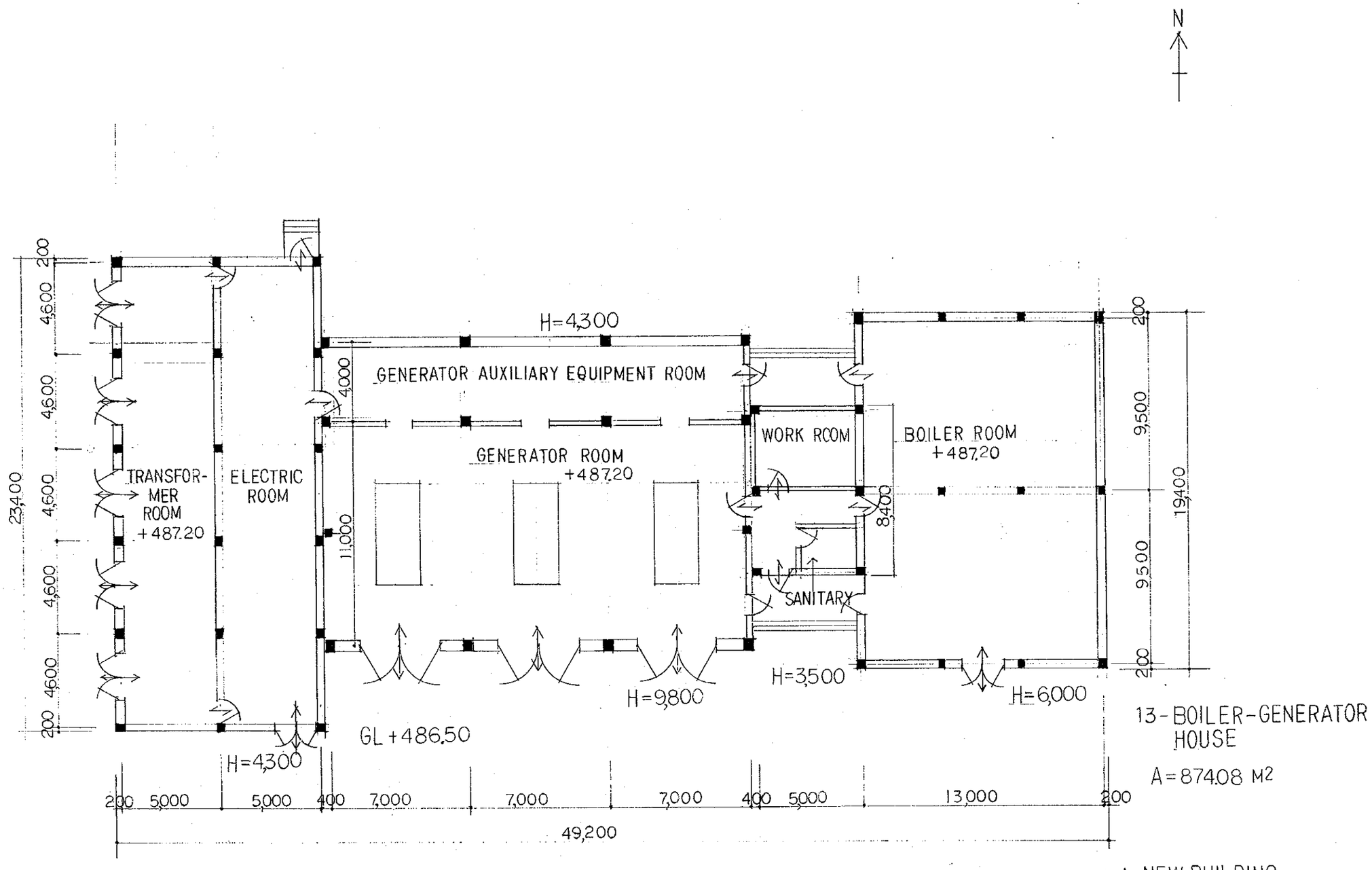
9-PRIMARY SLUDGE PUMPING STATION

Date : Nov. 99	THE FEASIBILITY STUDY ON THE WASTEWATER TREATMENT PLANT OF SARAJEVO	A-5
Scale: 1:1000	9 – PRIMARY SLUDGE PUMPING STATION (PLAN)	

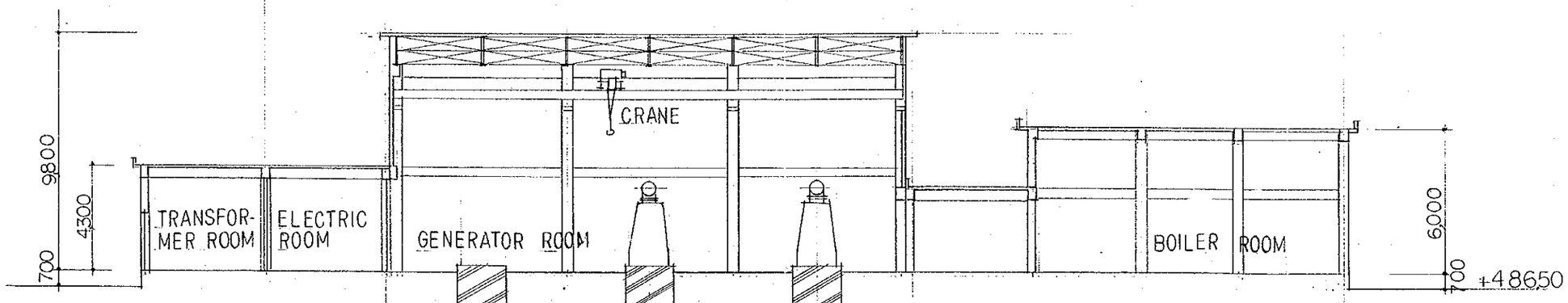


11-SLUDGE THICKENED PUMPING STATION
A=26.84 M²

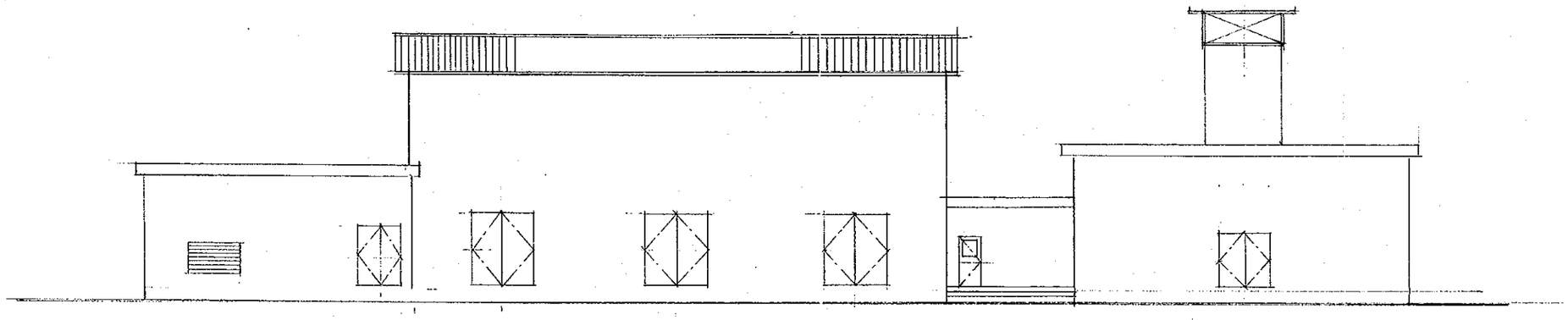
Date: Nov. 99	FEASIBILITY STUDY ON THE WASTEWATER TREATMENT PLANT OF SARAJEVO	Design Ref. No.
Scale: 1:1000	11 – THICKENED SLUDGE PUMPING STATION (PLAN)	A-6



Date : Nov. 99	THE FEASIBILITY STUDY ON THE WASTEWATER TREATMENT PLANT OF SARAJEVO	A-7
Scale: 1:2000	13 – BOILER & ENGINE GENERATOR ROOM (PLAN) *NEW BUILDING	



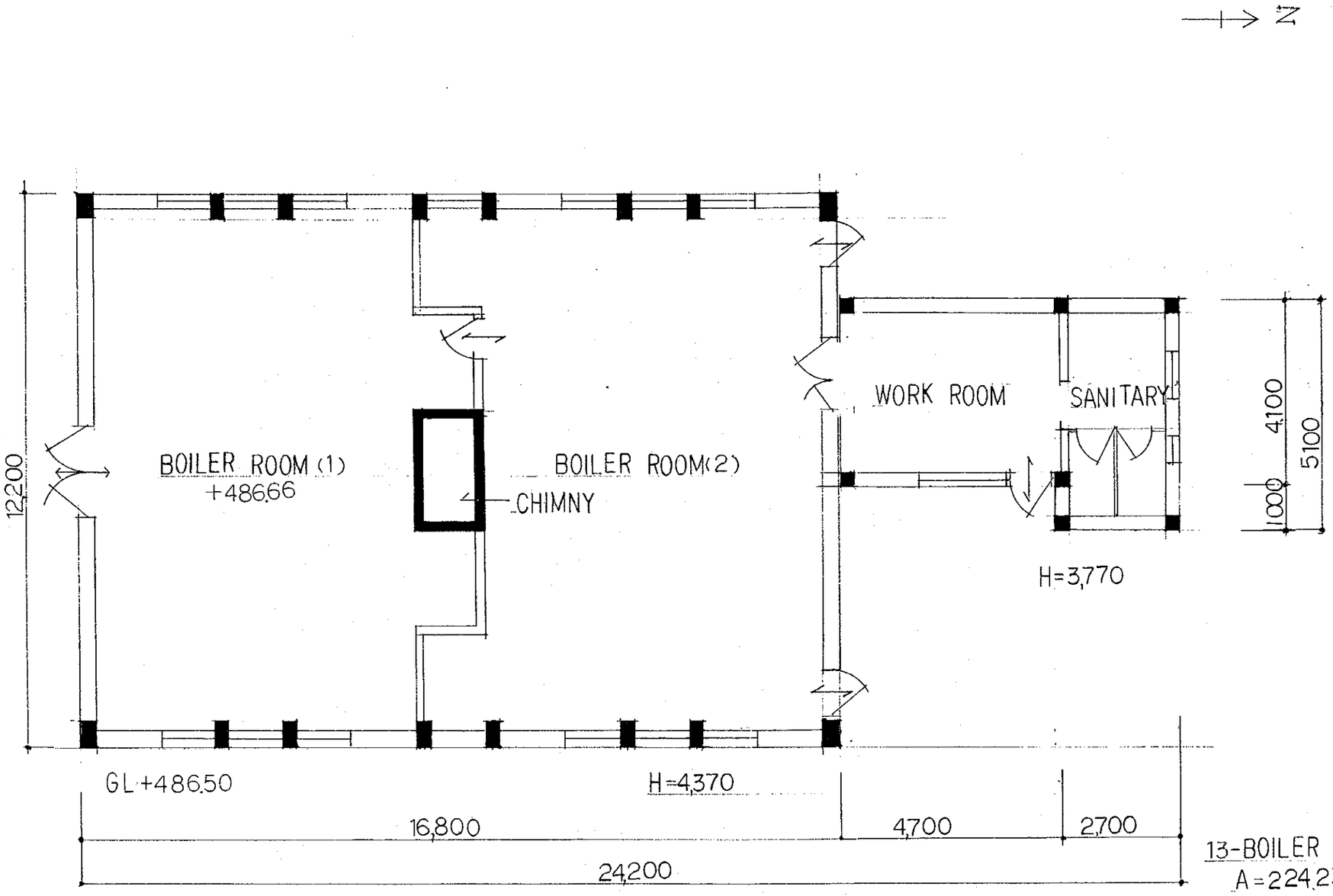
A-A SECTION



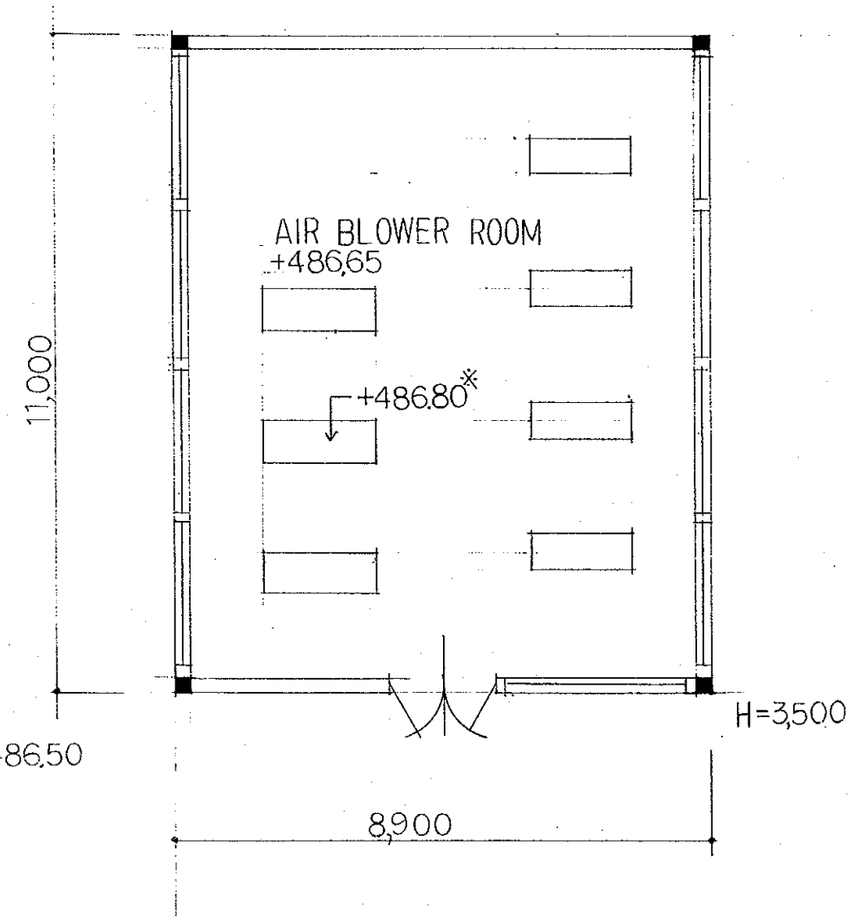
SOUTH-ELEVATION

13-BOILER-GENERATOR HOUSE
☆NEW BUILDING

Date : Nov. 99	THE FEASIBILITY STUDY ON THE WASTEWATER TREATMENT PLANT OF SARAJEVO	
Scale: 1:2000	13 –BOILER & ENGINE GENERATOR ROOM (SECTION) *NEW BUILDING	A-8

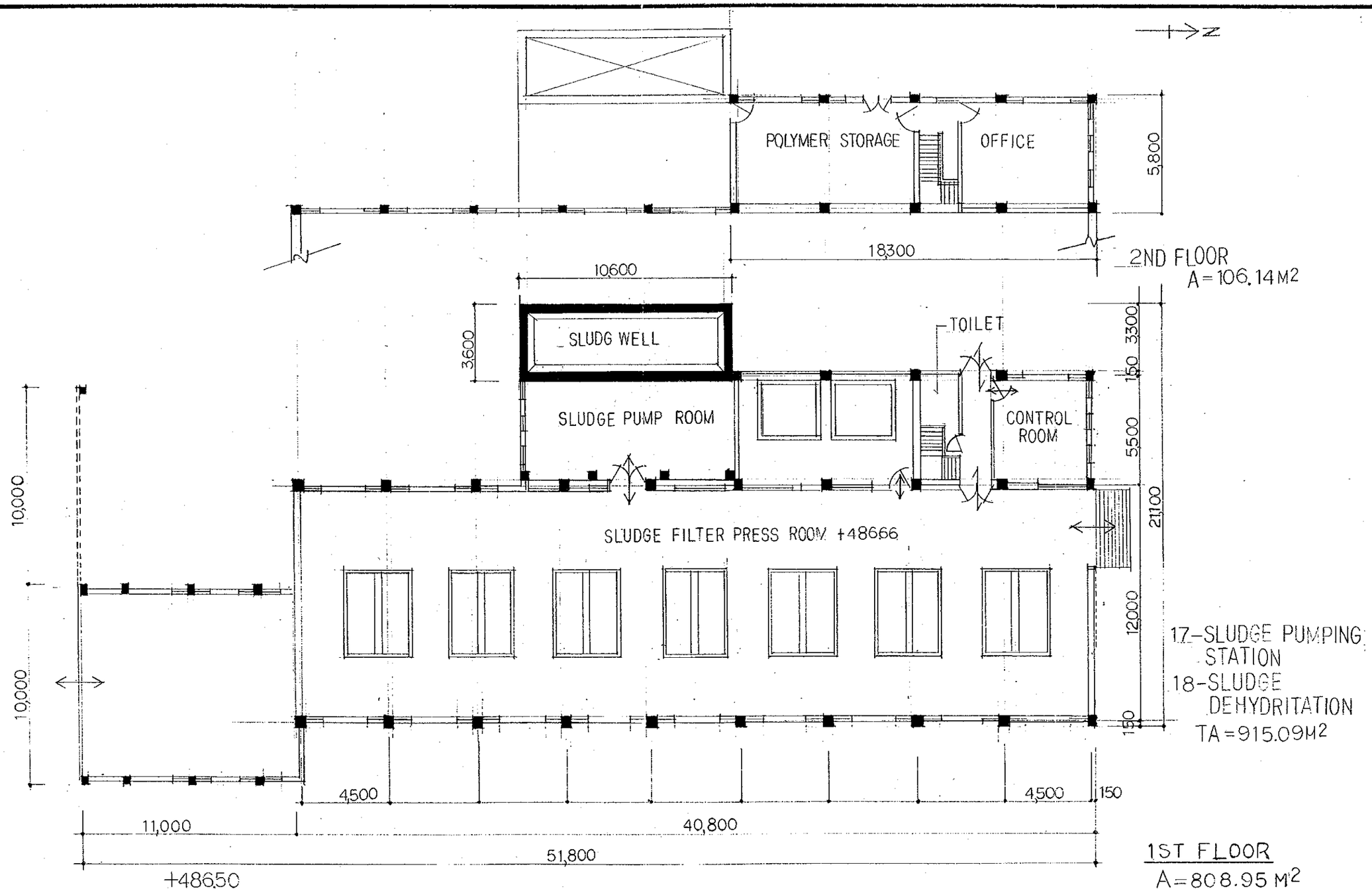


Date : Nov. 99	THE FEASIBILITY STUDY ON THE WASTEWATER TREATMENT PLANT OF SARAJEVO	A-9
Scale: 1:1000	13 – BOILER HOUSE (PLAN)	

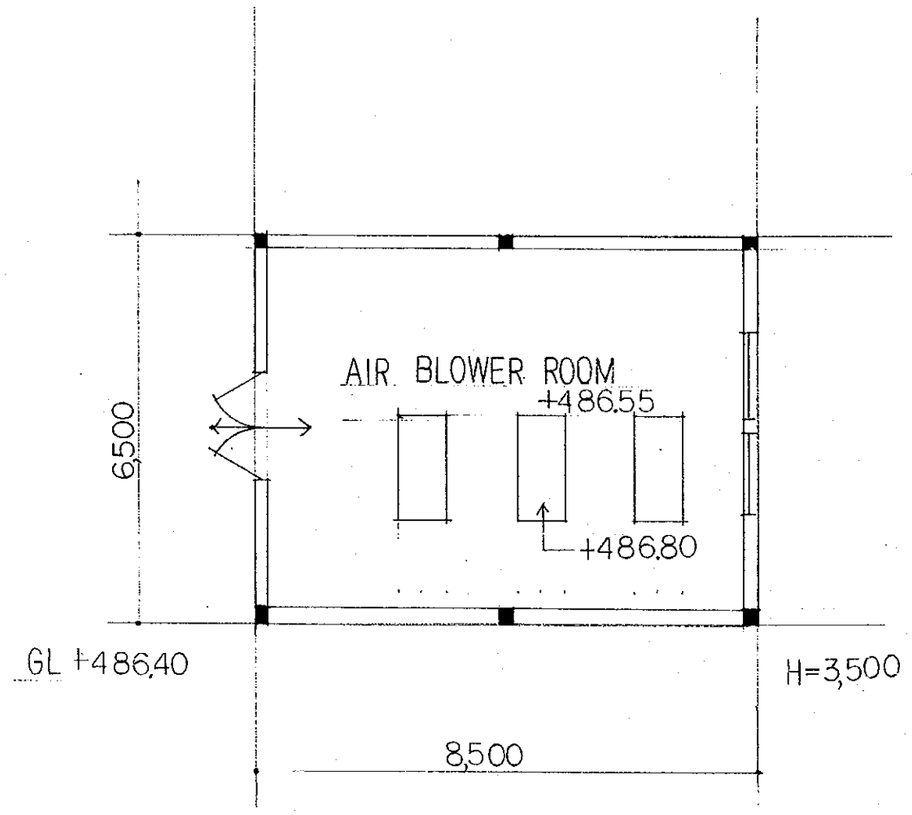


14-GAS COMPRESSOR STATION I
A = 97.90 M²

Date : Nov. 99	THE FEASIBILITY STUDY ON THE WASTEWATER TREATMENT PLANT OF SARAJEVO	A-10
Scale: 1:1000	14 -- GAS COMPRESSOR STATION (PLAN)	

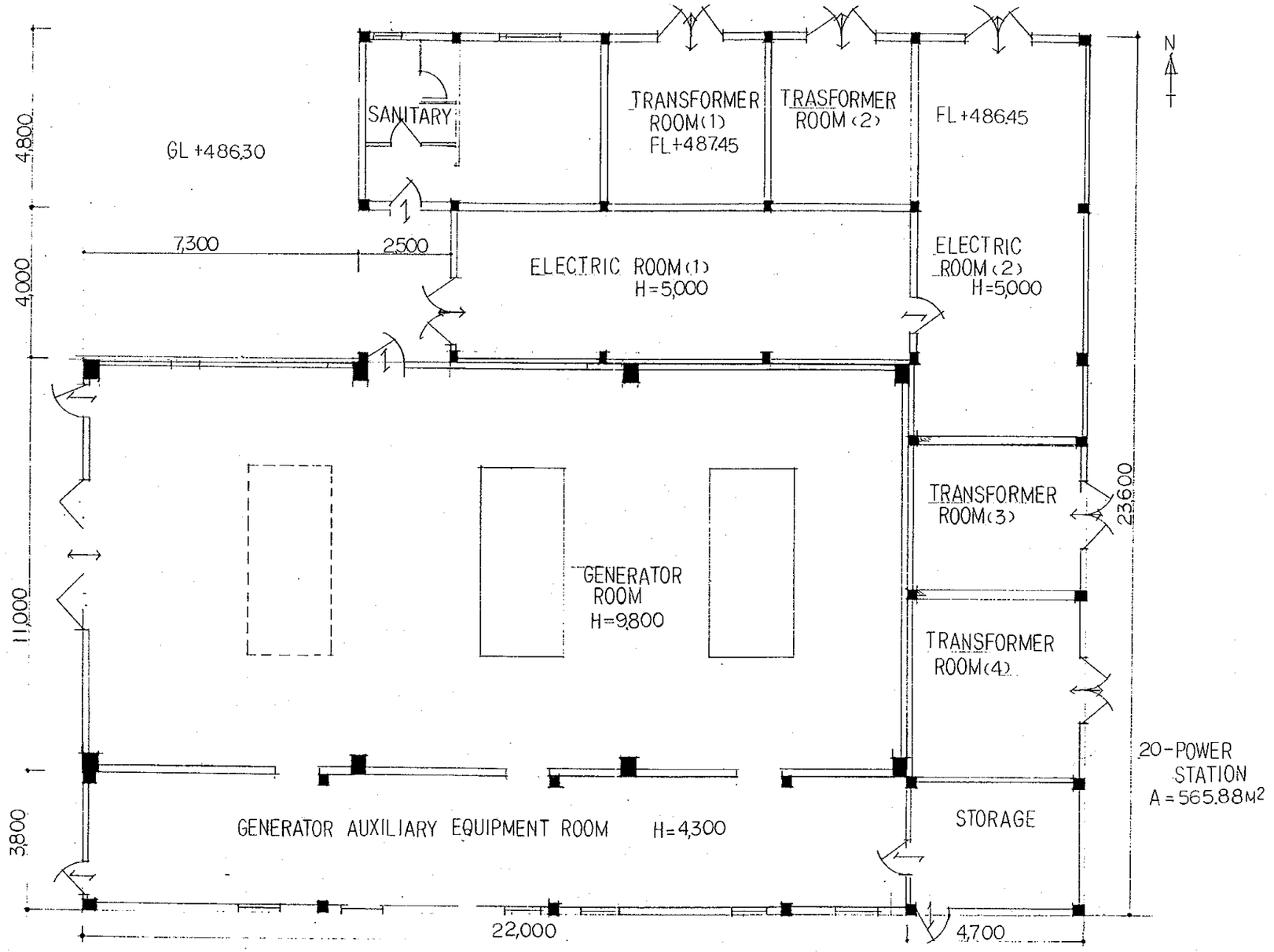


Date : Nov. 99	THE FEASIBILITY STUDY ON THE WASTEWATER TREATMENT PLANT OF SARAJEVO	
Scale: 1:2000	17 – SLUDGE PUMPING STATION (PLAN) 18 – SLUDGE DEHYDRATION (PLAN)	A-11

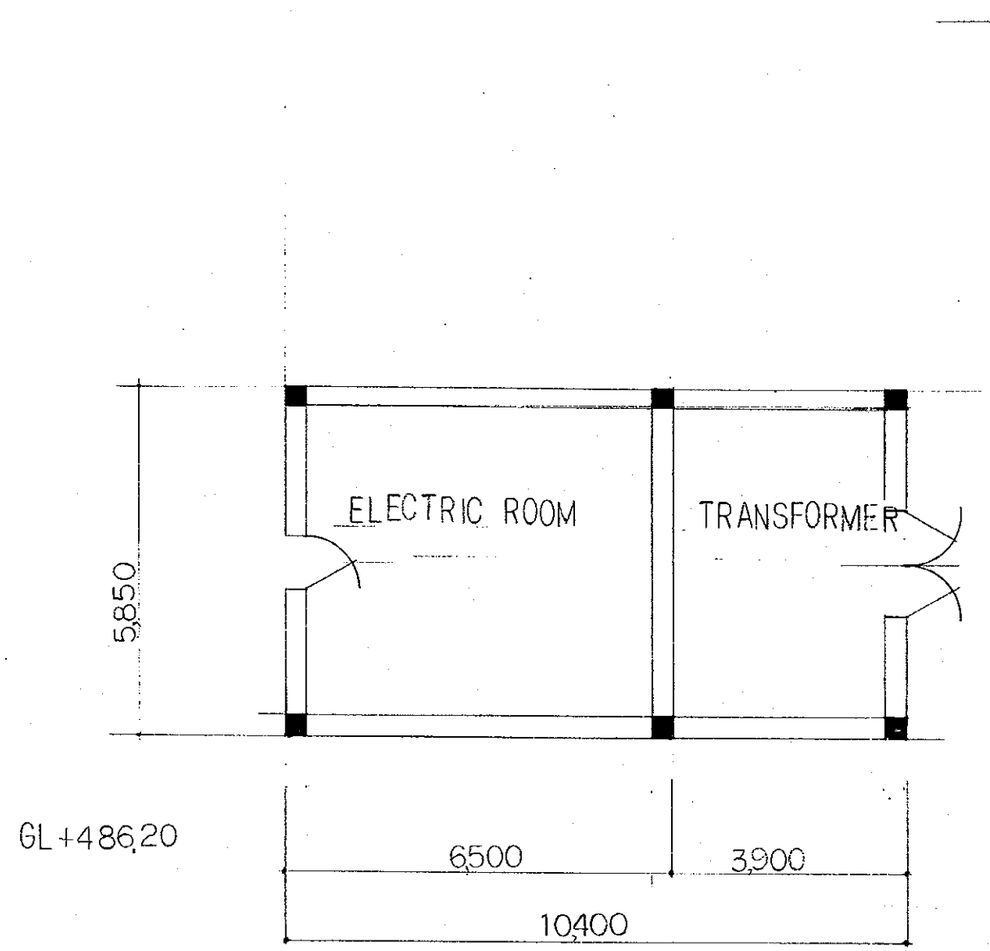


19 – AIR BLOWER ROOM
A = 55.25M2

Date : Nov. 99	THE FEASIBILITY STUDY ON THE WASTEWATER TREATMENT PLANT OF SARAJEVO	A-12
Scale: 1:1000	19 – AIR BLOWER ROOM (PLAN)	

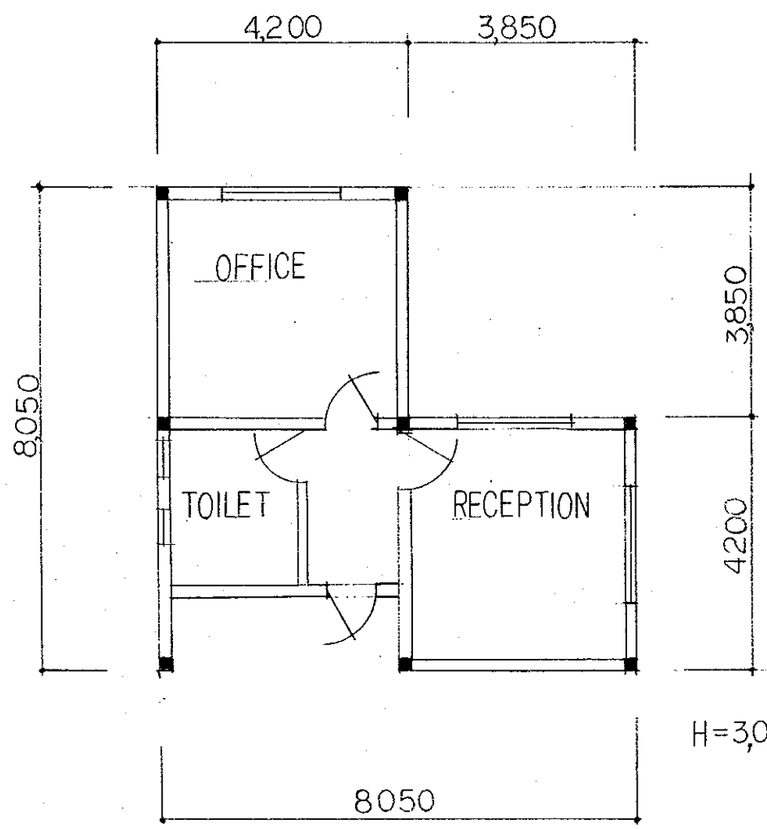


Date : Nov. 99	THE FEASIBILITY STUDY ON THE WASTEWATER TREATMENT PLANT OF SARAJEVO	A-13
Scale: As Shown	20 – POWER STATION (PLAN)	



21-SUBSTATION
A=60.84 M2

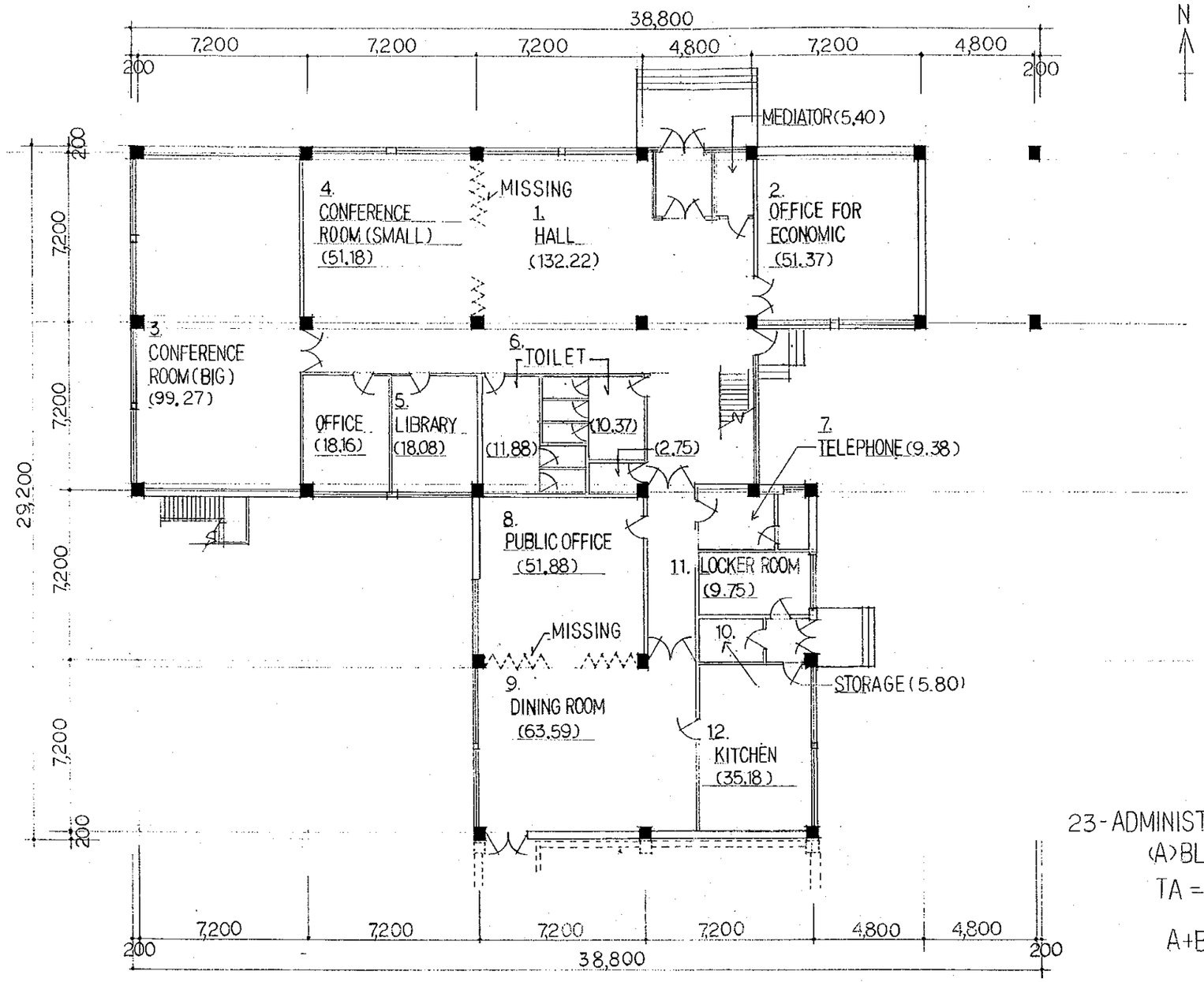
Date : Nov. 99	THE FEASIBILITY STUDY ON THE WASTEWATER TREATMENT PLANT OF SARAJEVO	A-14
Scale: 1:1000	21 – SUBSTATION (PLAN)	



N

22-RECEPTION
A=49.98M2

Date : Nov. 99	THE FEASIBILITY STUDY ON THE WASTEWATER TREATMENT PLANT OF SARAJEVO	A-15
Scale: 1:1000	22 – RECEPTION (PLAN)	

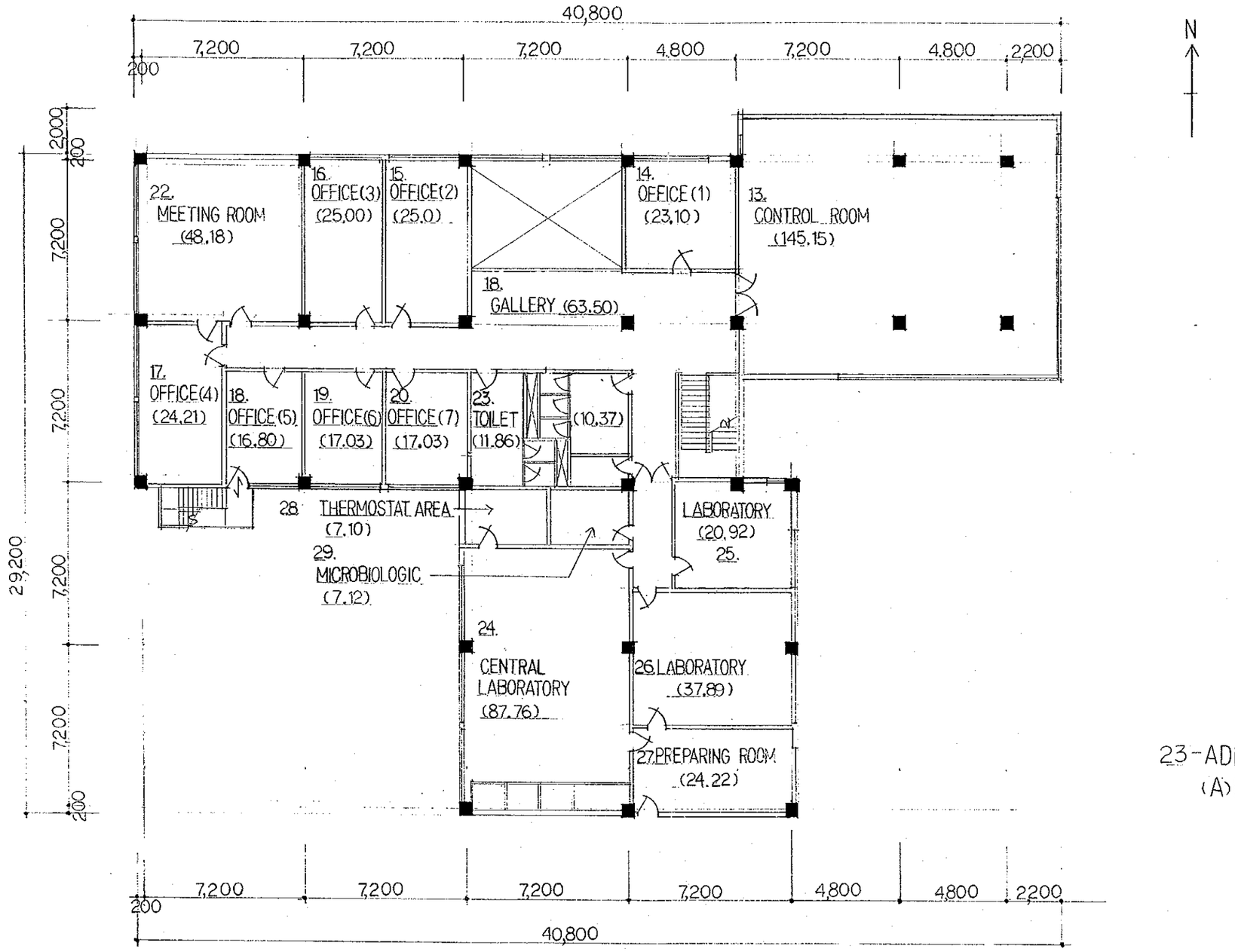


23-ADMINISTRATION BUILDING
(A)BLOCK
TA = 1,526,35 M²

A+B+C = 2,853,68 M²

1ST FLOOR
A=723,68 M²

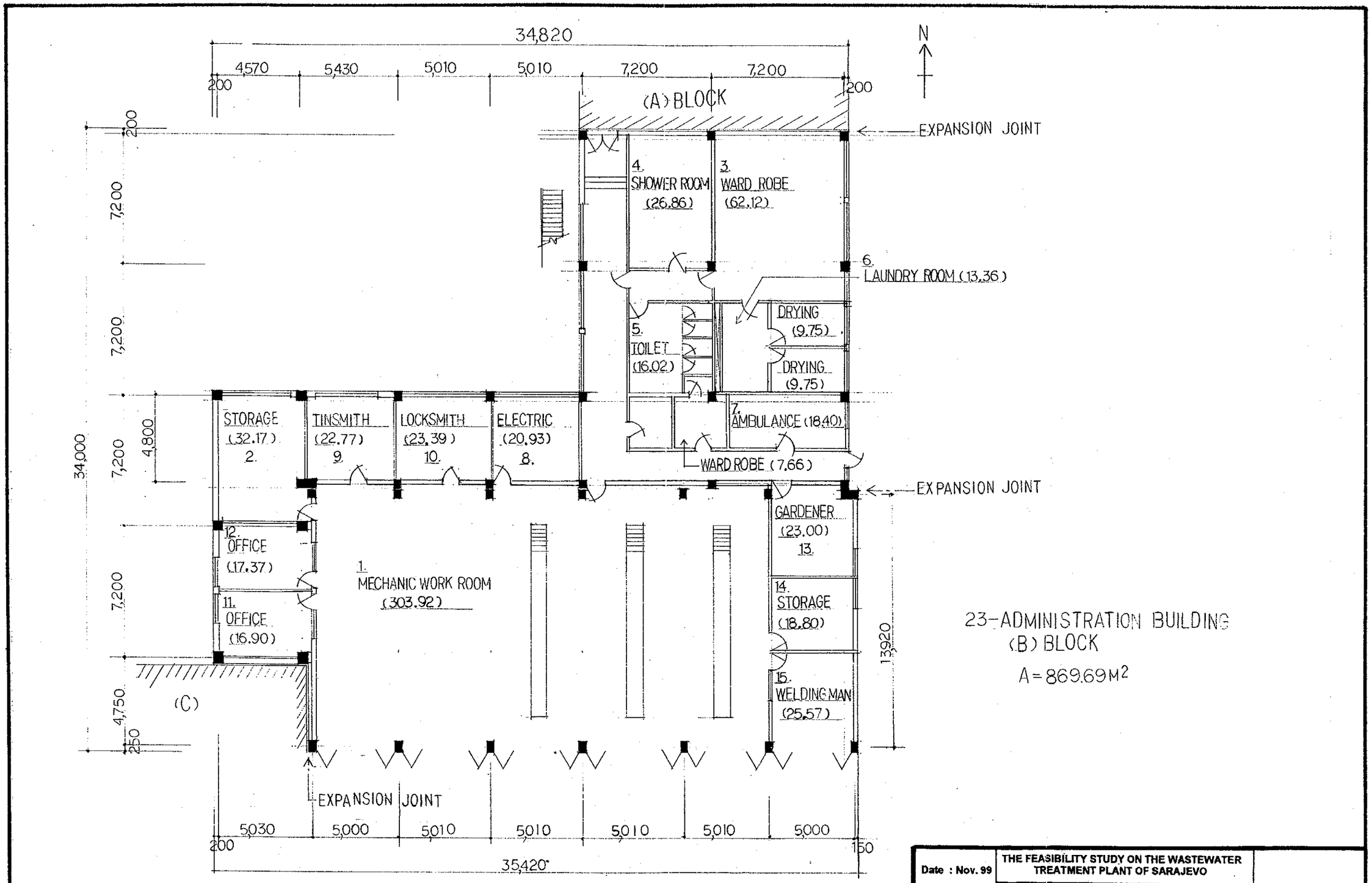
Date : Nov. 99	THE FEASIBILITY STUDY ON THE WASTEWATER TREATMENT PLANT OF SARAJEVO	
Scale: 1:2000	23 – ADMINISTRATION BUILDING (PLAN) (A) BLOCK	A-16



23-ADMINISTRATION BUILDING
(A) BLOCK

2ND FLOOR, A=802.68 M^2

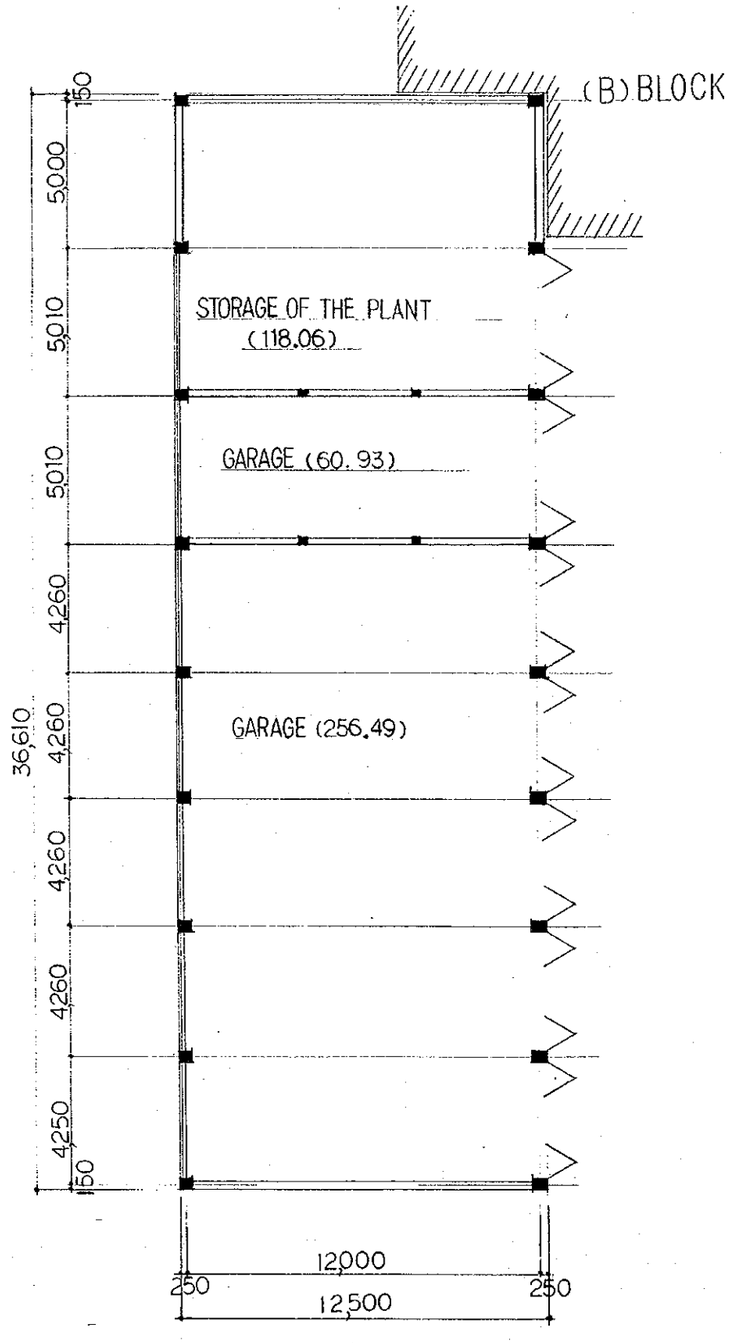
Date : Nov. 99	THE FEASIBILITY STUDY ON THE WASTEWATER TREATMENT PLANT OF SARAJEVO	A-17
Scale: 1:2000	23 -- ADMINISTRATION BUILDING (PLAN) (A) BLOCK	



23-ADMINISTRATION BUILDING
(B) BLOCK

A = 869.69 M²

Date : Nov. 99	THE FEASIBILITY STUDY ON THE WASTEWATER TREATMENT PLANT OF SARAJEVO	A-18
Scale: 1:2000	23 – ADMINISTRATION BUILDING (PLAN) (B) BLOCK	

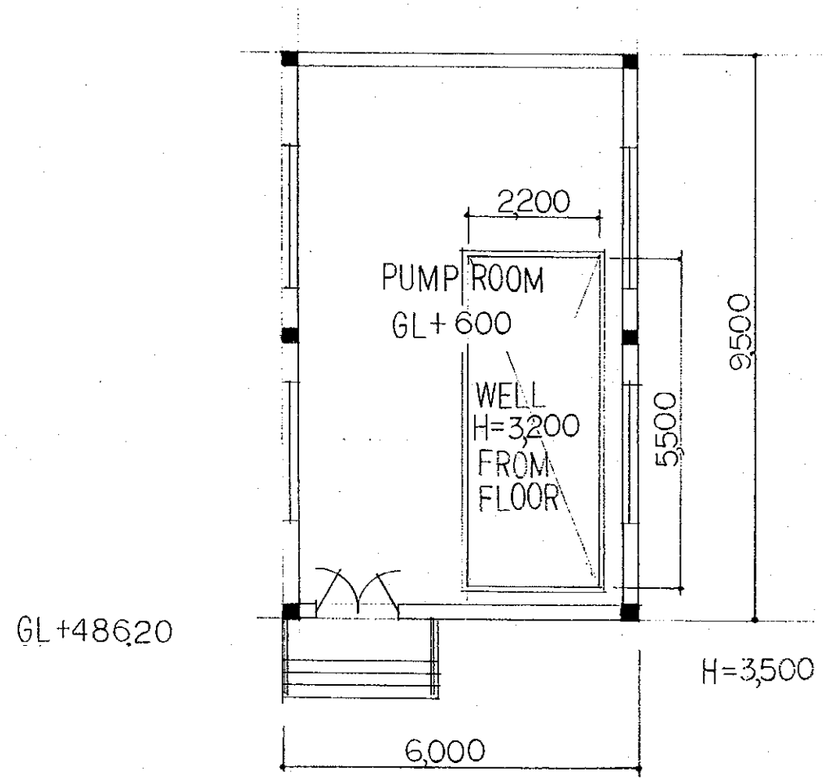


23-ADMINISTRATION BUILDING (C) BLOCK

A=457.63 M²

Date : Nov. 99	THE FEASIBILITY STUDY ON THE WASTEWATER TREATMENT PLANT OF SARAJEVO	A-19
Scale: 1:2000	23 – ADMINISTRATION BUILDING (PLAN) (C) BLOCK	

N



24-SERVICE WATER
PUMPING STATION
A = 57.00 M2

Date : Nov. 99	THE FEASIBILITY STUDY ON THE WASTEWATER TREATMENT PLANT OF SARAJEVO	A-20
Scale: 1:1000	24 – SERVICE WATER PUMPING STATION (PLAN)	

FROM INLET CHAMBER TO SARAJEVO W.W.T.P

PRE-TREATMENT

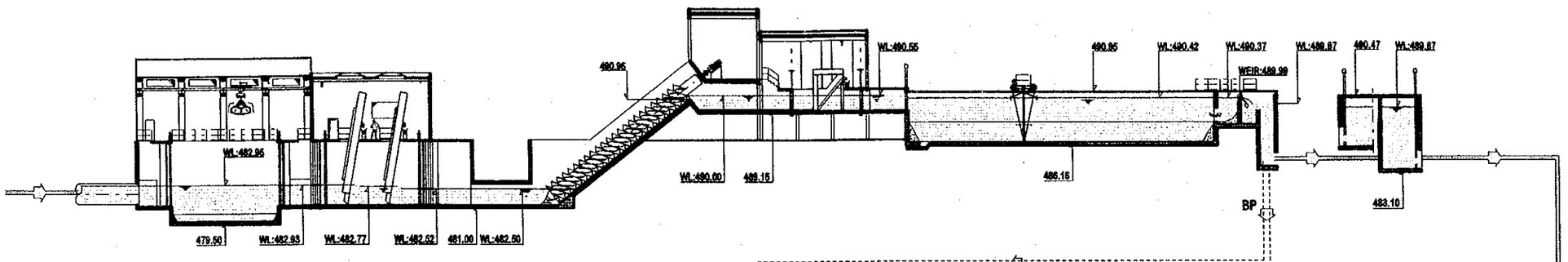
PRE-SCREENING STATION

RAW WATER PUMPING STATION

SCREENING STATION

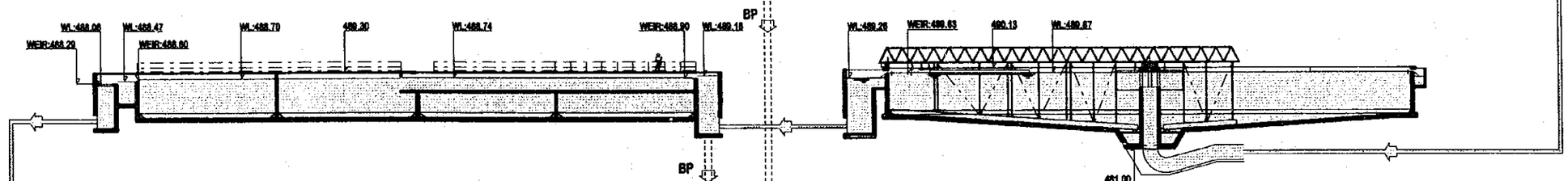
AERATED GRIT CHAMBER

DISTRIBUTION CHAMBER PRIMARY SEDIMENTATION TANKS



AERATION TANKS

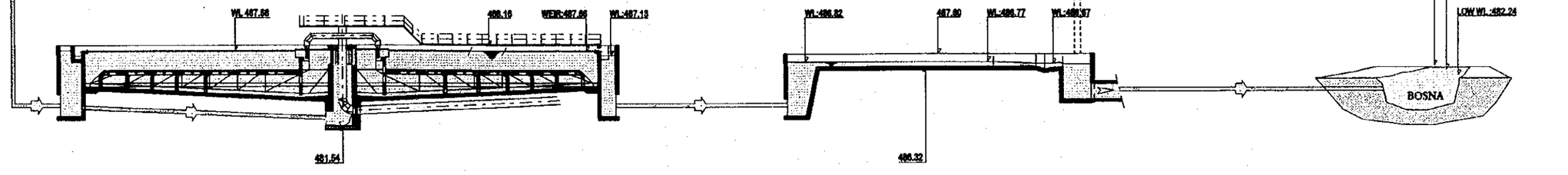
PRIMARY SEDIMENTATION TANKS



FINAL SEDIMENTATION TANK

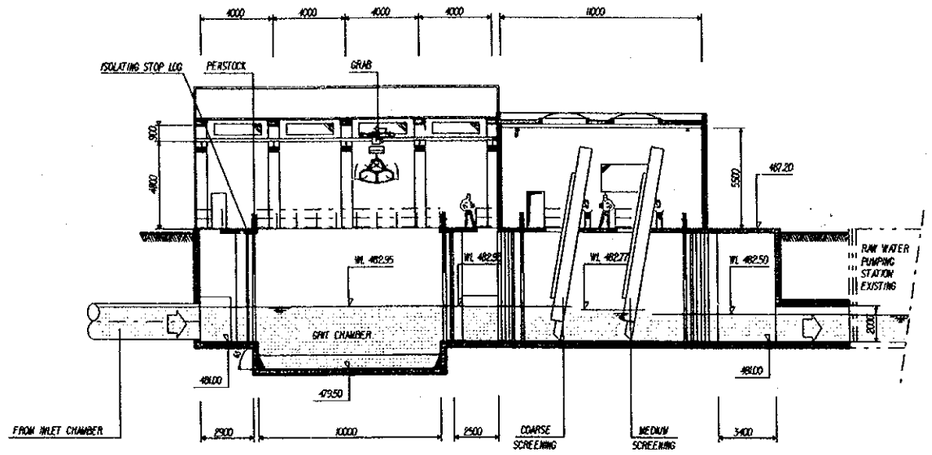
FLOW METERING

EFFLUENT OUTFALL TO RIVER BOSNA 1600 x 2000

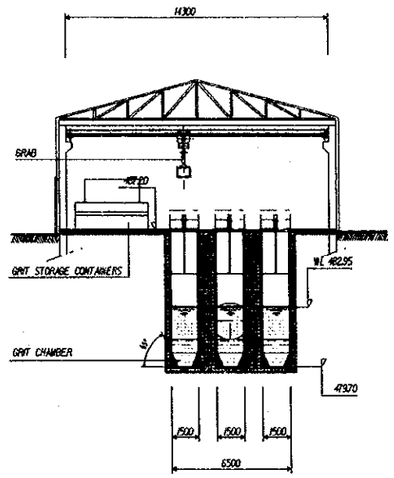


Date : Nov. 99 Scale: Not to scale	THE FEASIBILITY STUDY ON THE WASTEWATER TREATMENT PLANT OF SARAJEVO PLANT INSTALLATION SECTION	M-1

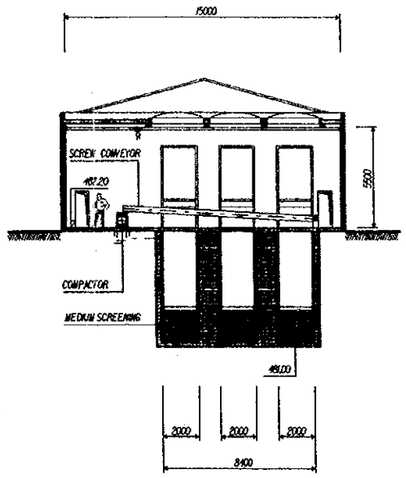
SECTION -AA-



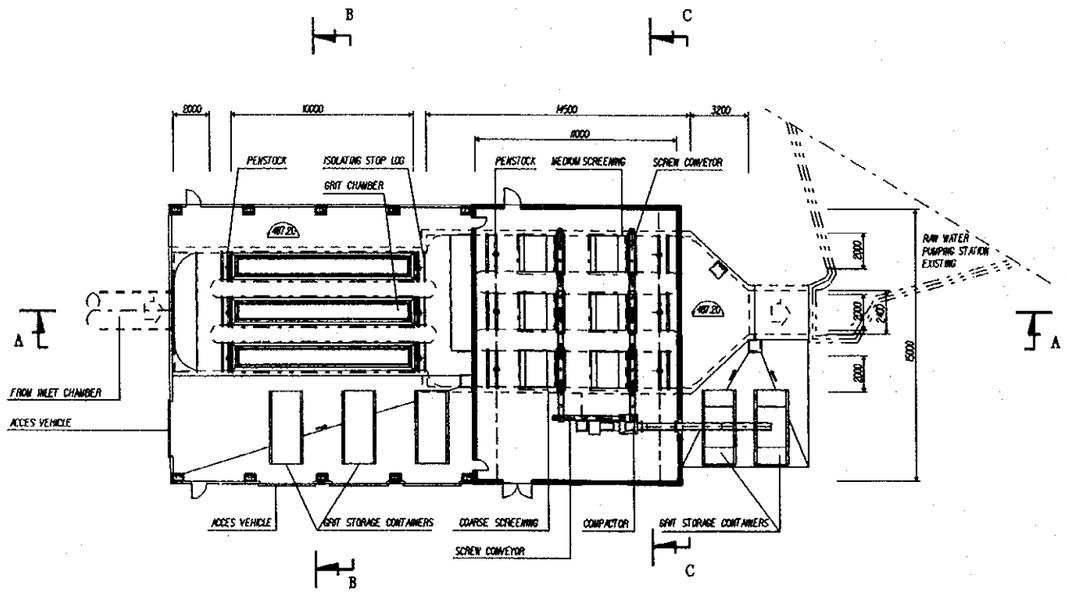
SECTION -BB-

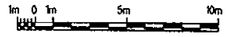


SECTION -CC-



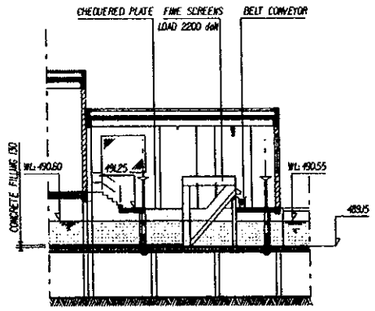
PLAN VIEW



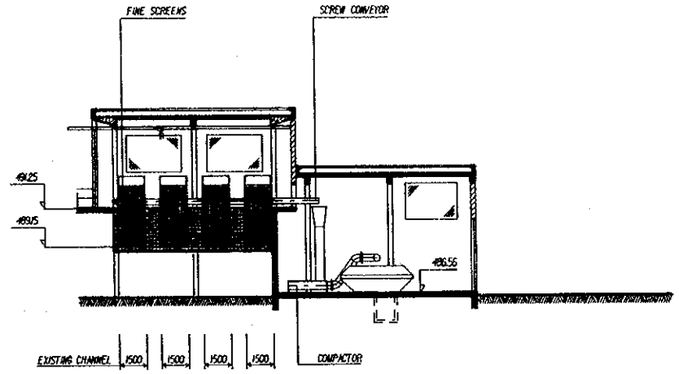


Date : Nov. 99 Scale: As shown	THE FEASIBILITY STUDY ON THE WASTEWATER TREATMENT PLANT OF SARAJEVO PRE-TREATMENT AND PRE-SCREENING STATION	M－2

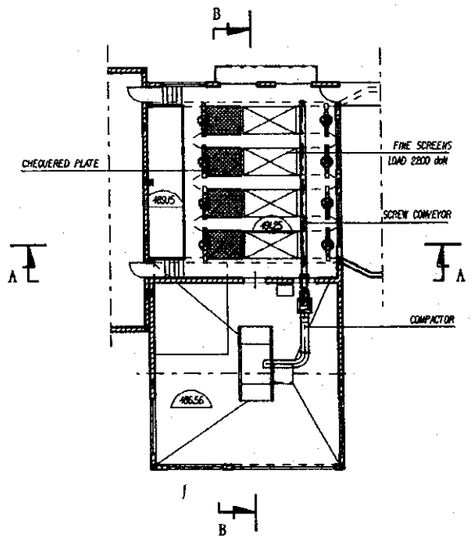
SECTION -AA-

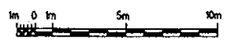


SECTION -BB-



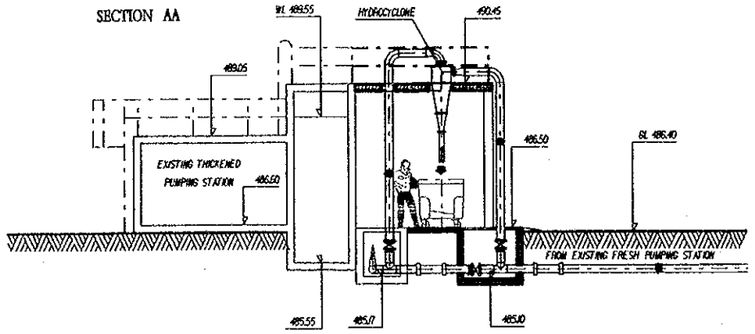
PLAN VIEW



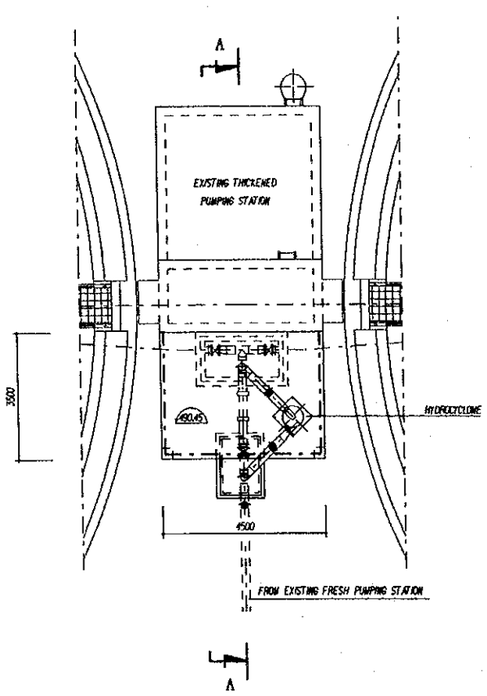


Date : Nov. 99 Scale: As shown	THE FEASIBILITY STUDY ON THE WASTEWATER TREATMENT PLANT OF SARAJEVO SCREENING STATION	M - 3

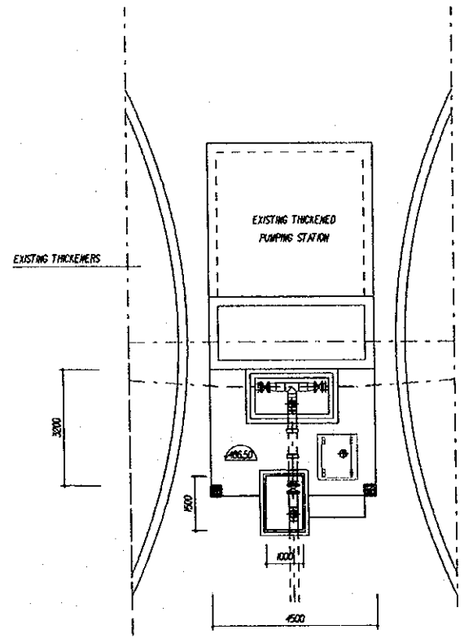
SECTION AA

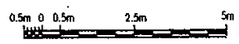


PLAN VIEW



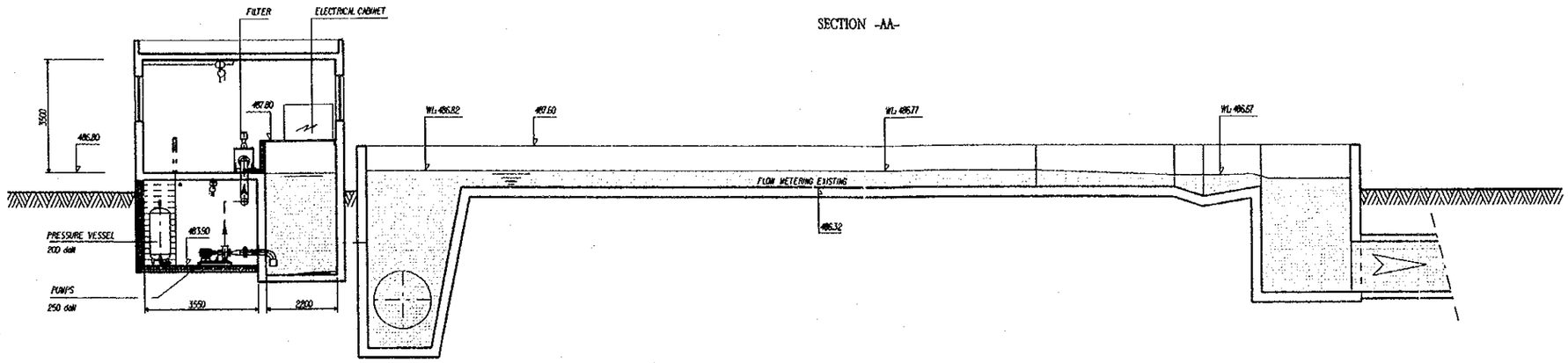
PLAN VIEW LEVEL 486.50



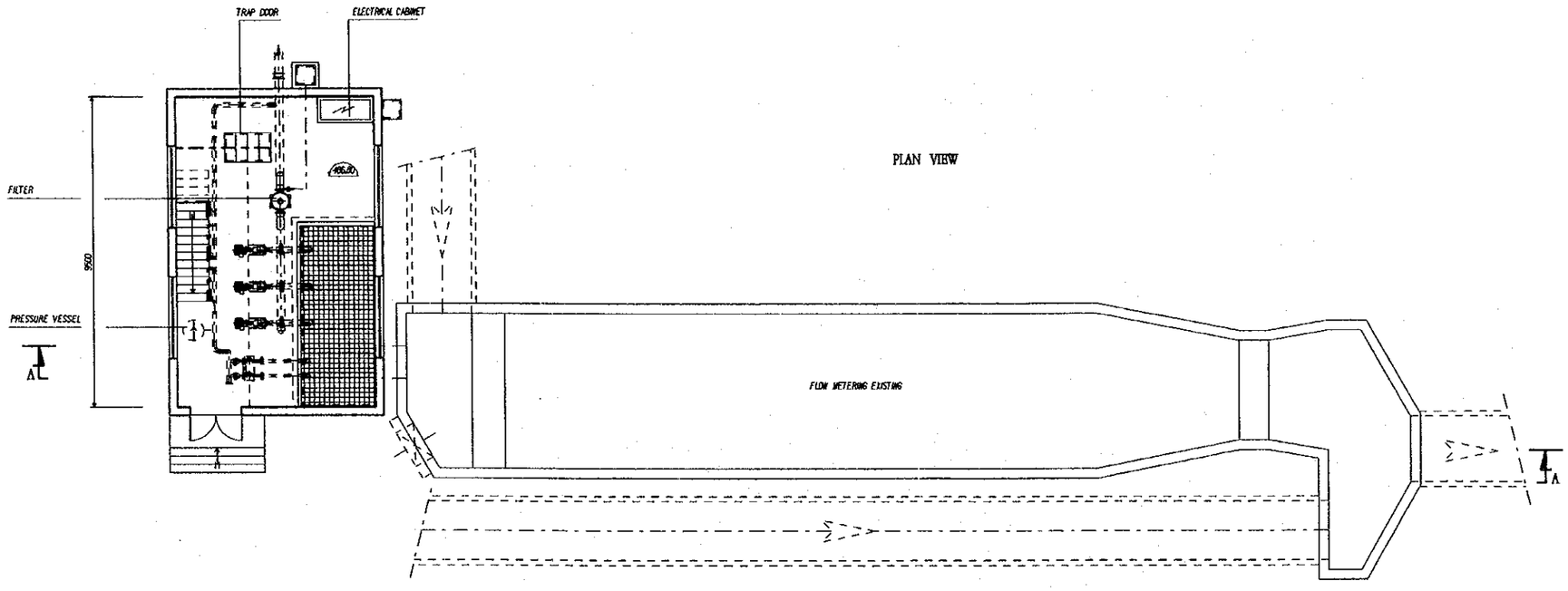


Date : Nov. 99 Scale: As shown	THE FEASIBILITY STUDY ON THE WASTEWATER TREATMENT PLANT OF SARAJEVO FRESH SLUDGE HYDROCYCLONE	M – 4

SECTION -AA-

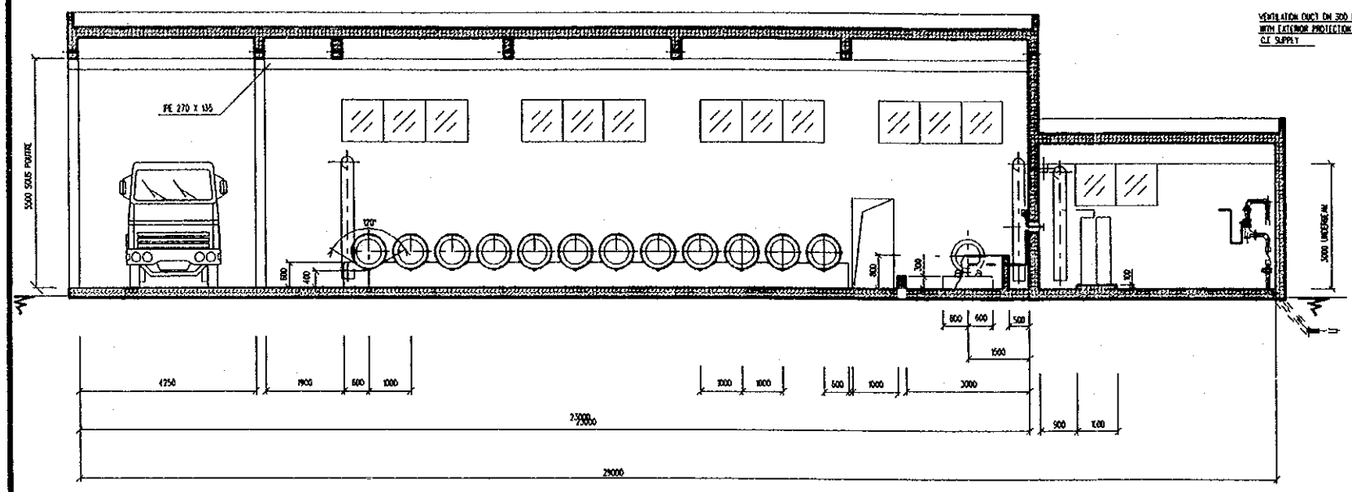


PLAN VIEW

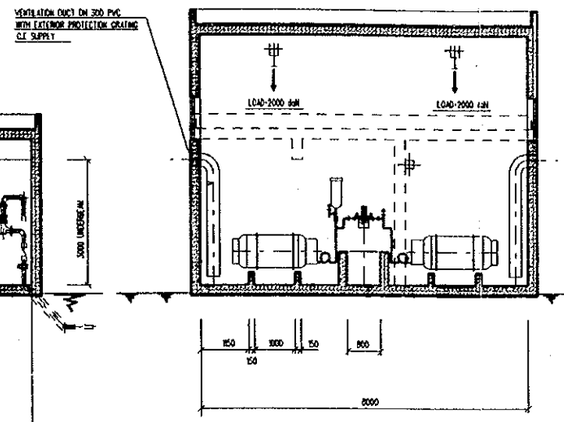


Date : Nov. 99 Scale: As shown	THE FEASIBILITY STUDY ON THE WASTEWATER TREATMENT PLANT OF SARAJEVO SERVICE WATER PUMPING STATION	M - 5

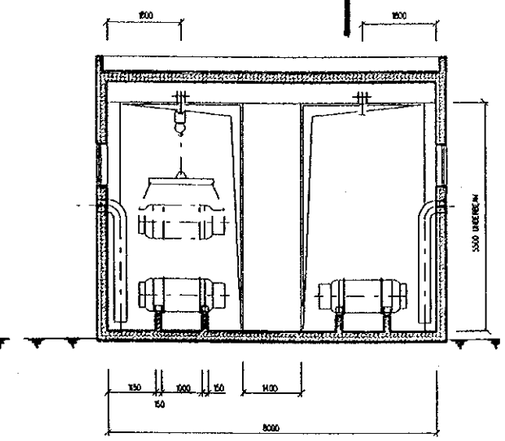
- SECTION AA -



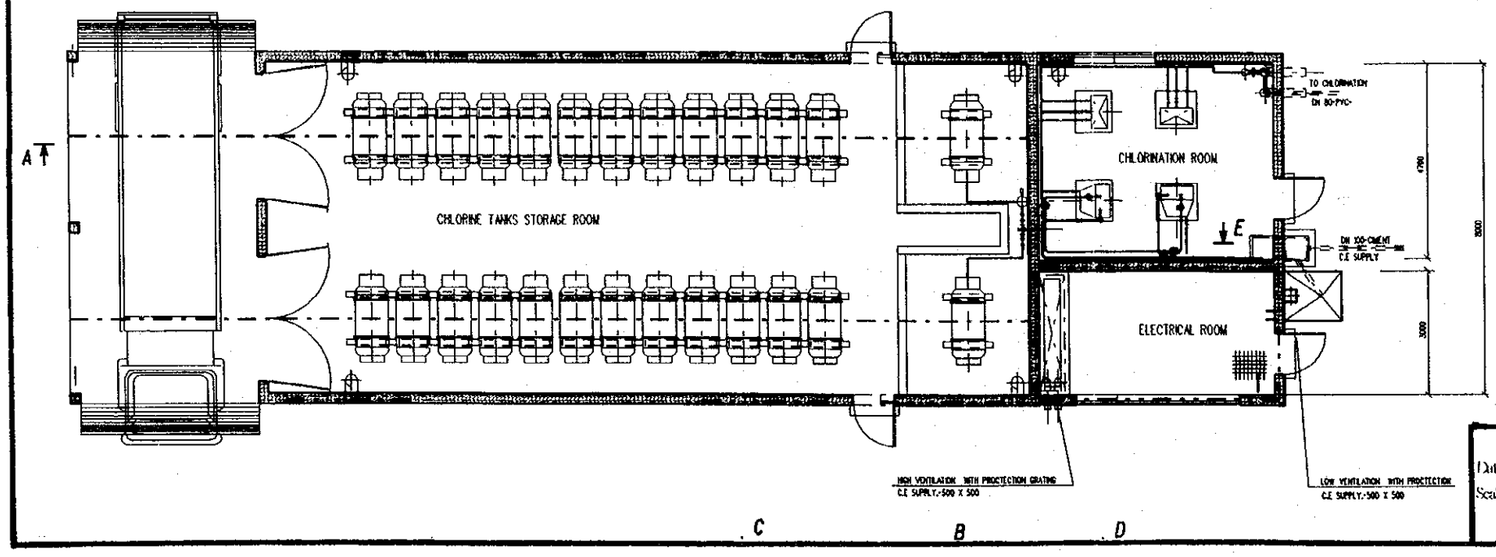
- SECTION BB -



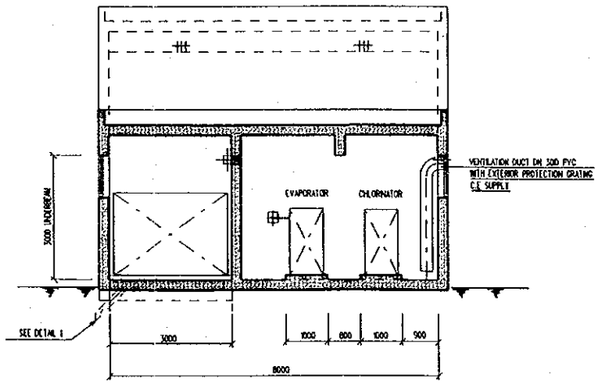
- SECTION CC -



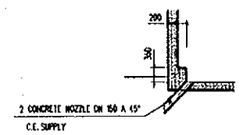
- PLAN VIEW -



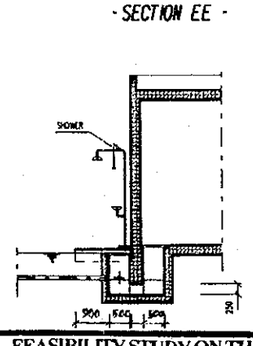
- COUPE DD -



DETAIL I



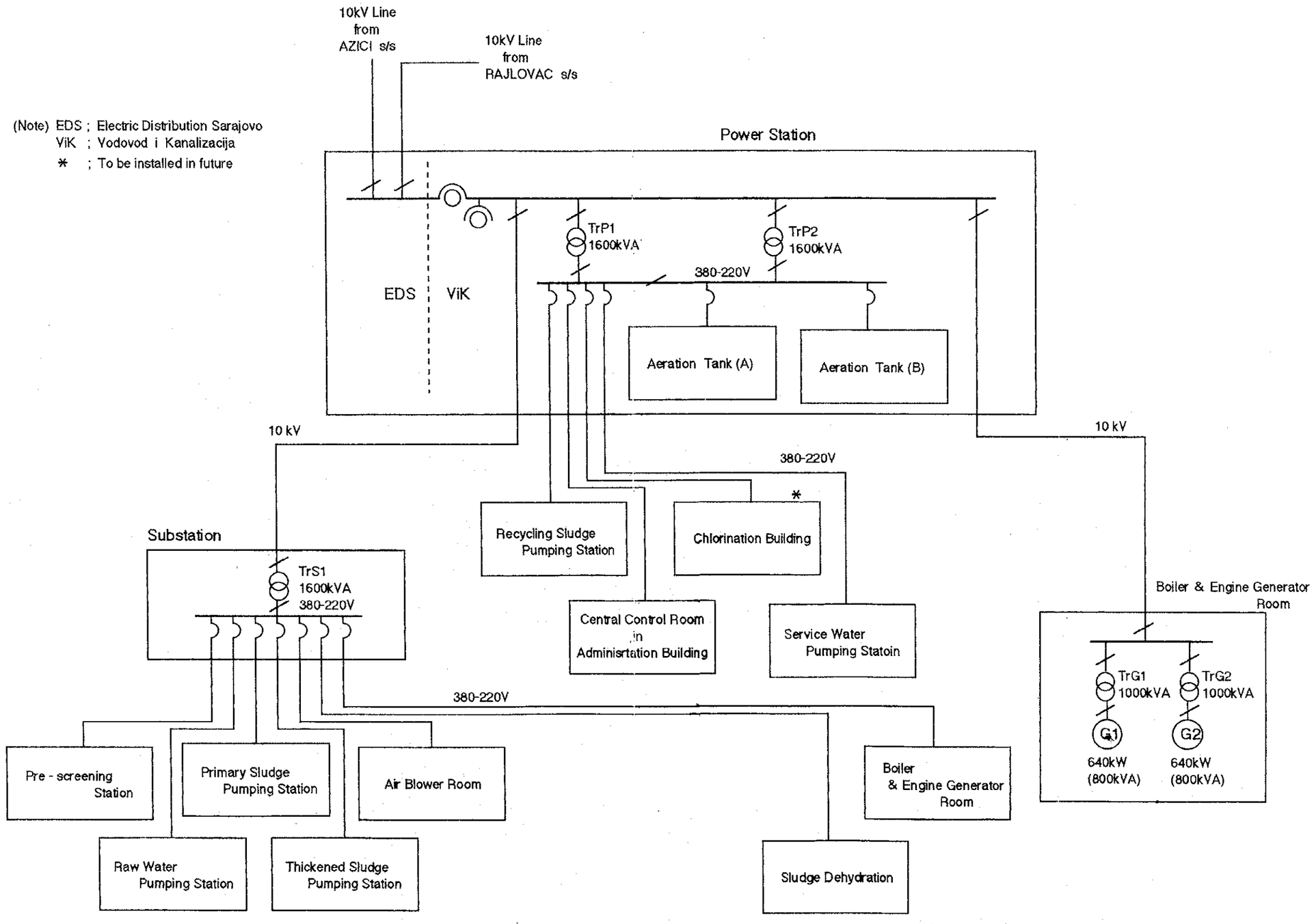
- SECTION EE -



0.5m 0 0.5m 2.5m 5m

Date: Nov. 99 Scale: As shown	FEASIBILITY STUDY ON THE WASTEWATER TREATMENT PLANT OF SARAJEVO	
	EFFLUENT CHLORINATION – YEAR 2015	M – 6

(Note) EDS ; Electric Distribution Sarajevo
ViK ; Vodovod i Kanalizacija
* ; To be installed in future

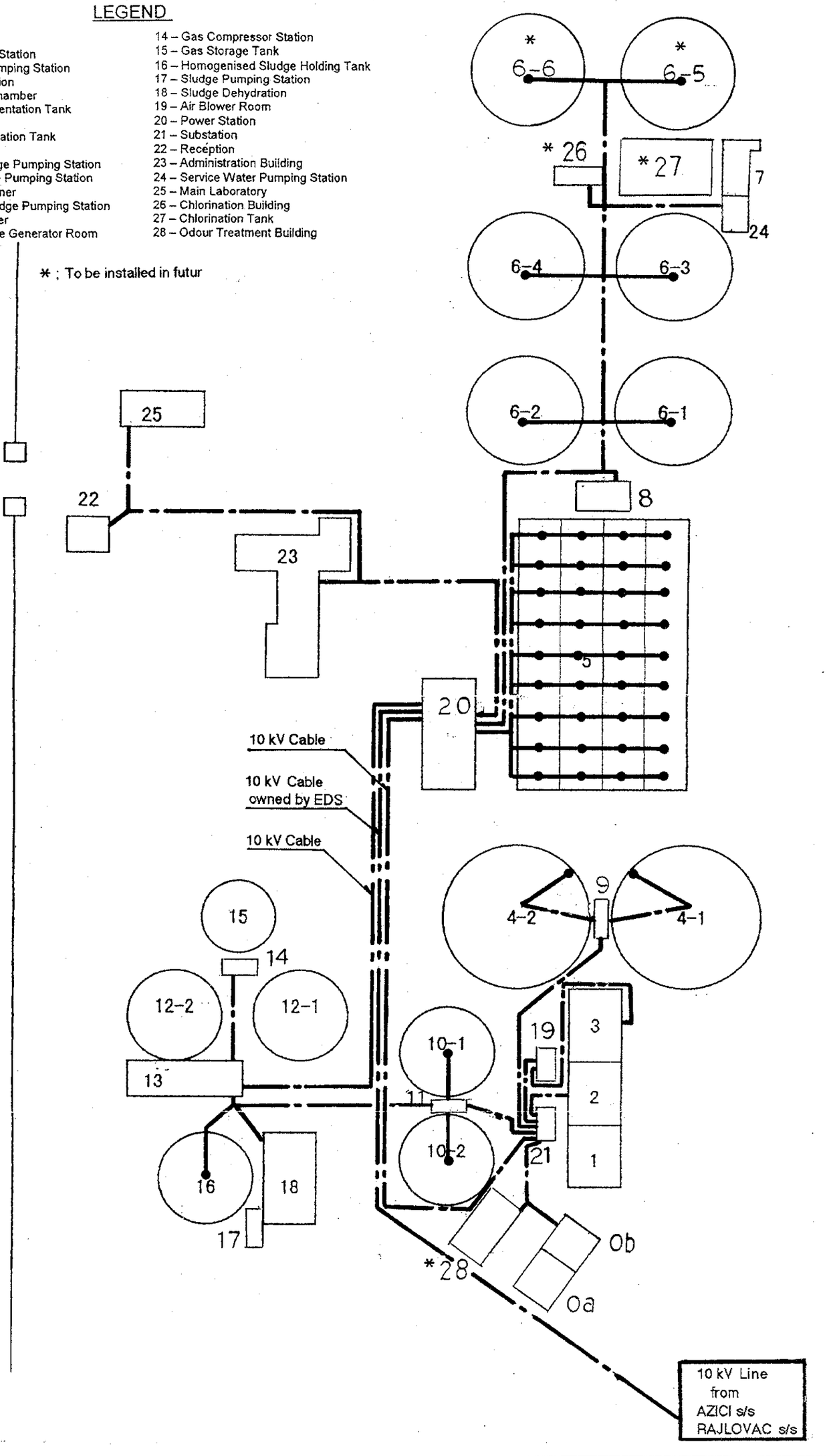


Date : Nov. 99 Scale:	THE FEASIBILITY STUDY ON THE WASTEWATER TREATMENT PLANT OF SARAJEVO	
	SINGLE LINE DIAGRAM	E-1

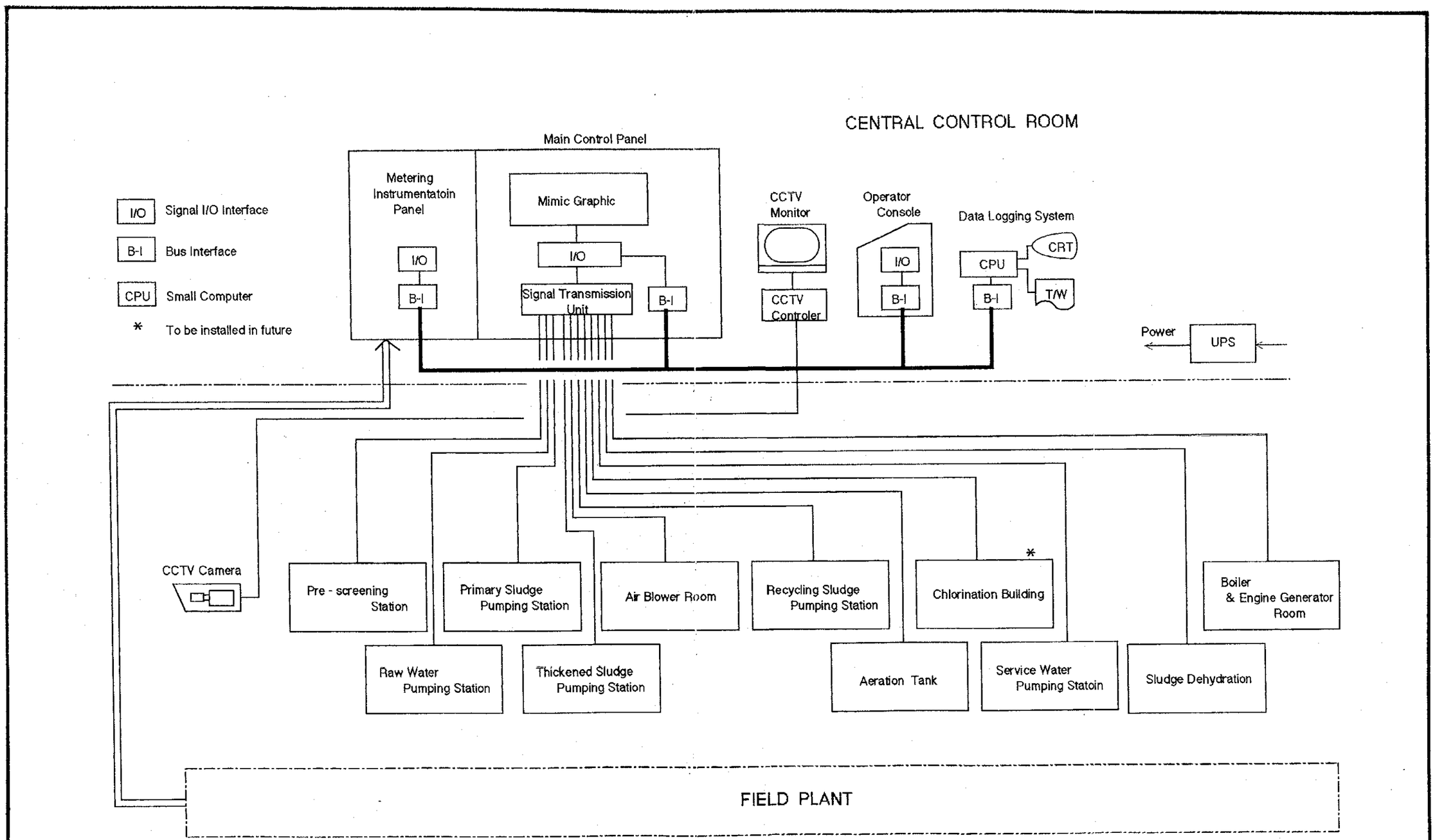
LEGEND

0A – Pre-treatment
0B – Pre-screening Station
1 – Raw Water Pumping Station
2 – Screening Station
3 – Aerated Grit Chamber
4 – Primary Sedimentation Tank
5 – Aeration Tank
6 – Final Sedimentation Tank
7 – Flow Metering
8 – Recycled Sludge Pumping Station
9 – Primary Sludge Pumping Station
10 – Sludge Thickener
11 – Thickened Sludge Pumping Station
12 – Sludge Digester
13 – Boiler & Engine Generator Room
14 – Gas Compressor Station
15 – Gas Storage Tank
16 – Homogenised Sludge Holding Tank
17 – Sludge Pumping Station
18 – Sludge Dehydration
19 – Air Blower Room
20 – Power Station
21 – Substation
22 – Reception
23 – Administration Building
24 – Service Water Pumping Station
25 – Main Laboratory
26 – Chlorination Building
27 – Chlorination Tank
28 – Odour Treatment Building

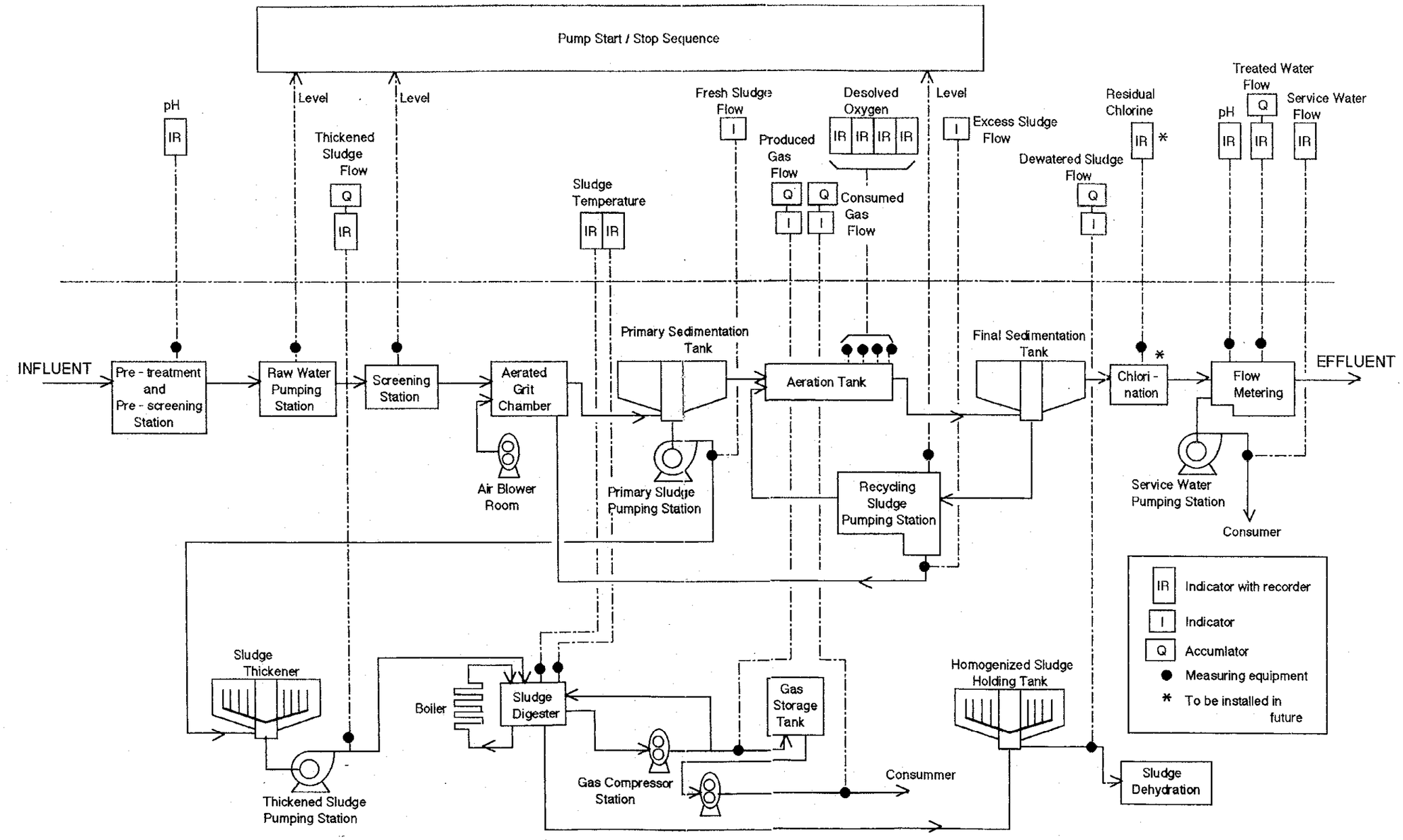
* ; To be installed in futur



Date : Nov. 99 Scale:	
THE FEASIBILITY STUDY ON THE WASTEWATER TREATMENT PLANT OF SARAJEVO	
MAIN CABLING – PLAN	
E-2	

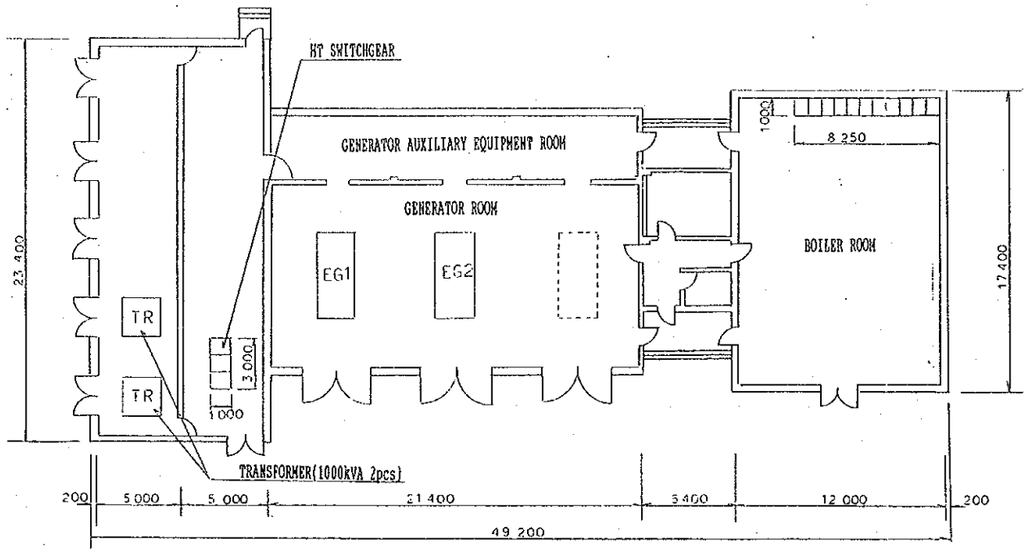


Date : Nov. 99 Scale:	THE FEASIBILITY STUDY ON THE WASTEWATER TREATMENT PLANT OF SARAJEVO	
	CONTROL SYSTEM DIAGRAM	E-3

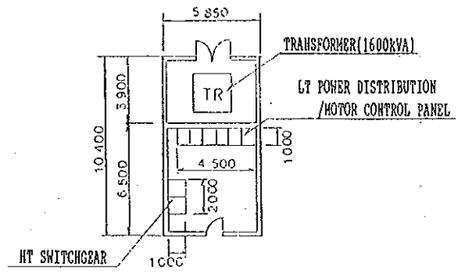


Date : Nov. 99 Scale:	THE FEASIBILITY STUDY ON THE WASTEWATER TREATMENT PLANT OF SARAJEVO	
	INSTRUMENTATION SCHEMATIC DIAGRAM	E - 4

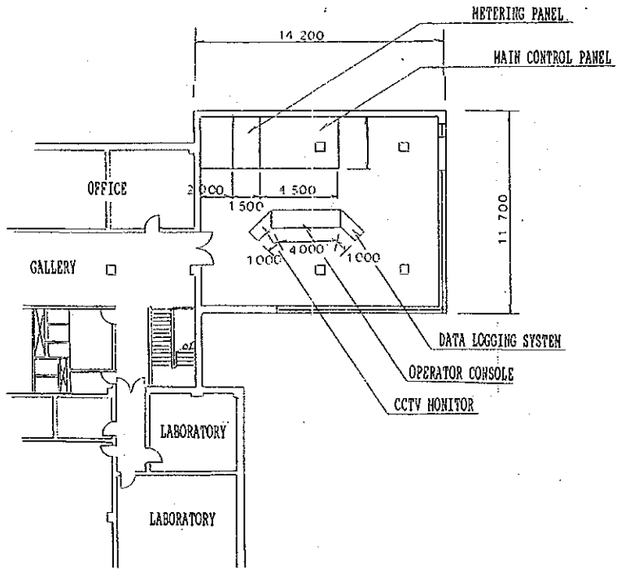
BOILER & ENGINE GENERATOR ROOM(13)



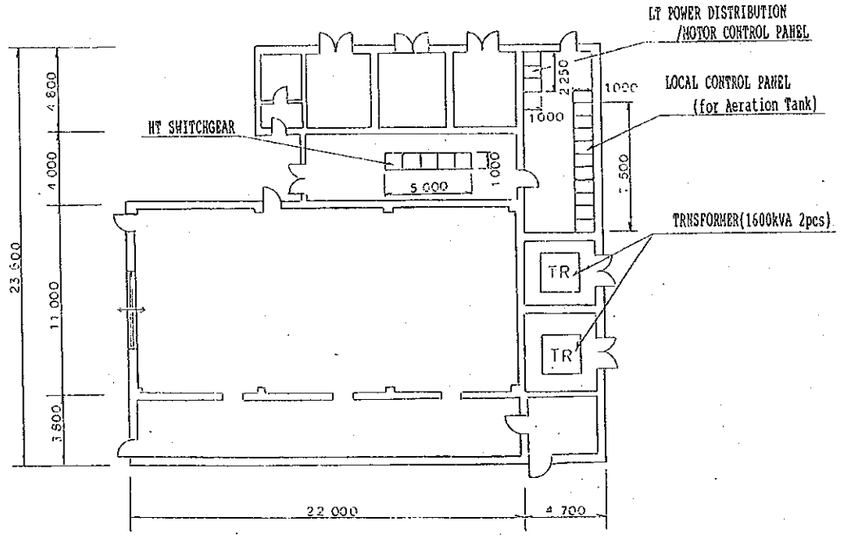
SUBSTATION(21)



ADMINISTRATION BUILDING(23)



POWER STATION(20)



Date : Nov. 99 Scale:	THE FEASIBILITY STUDY ON THE WASTEWATER TREATMENT PLANT OF SARAJEVO	
	LAYOUT PLAN OF ELECTRICAL EQUIPMENT	E - 5

Equipment	Qty.	Specification
0. Pre-treatment and Pre-screening Station		
-Local control panel	1 lot	Metal enclosed indoor type
-CCTV camera and monitor	1 lot	Monitor is installed in Administration
-Measuring instrument	1 pc.	PH
1. Raw Water Pumping Station		
-Local control panel	1 lot	Metal enclosed indoor type
-Measuring instrument	1 pc	Level
2. Screening Station		
-Measuring instrument	1 pc.	Level
5.Aeration Tank		
-Local control panel	1 lot	Metal enclosed indoor type
-Switch box for machine side	1 lot	Metal enclosed outdoor type
-Measuring instrument	4 pcs.	DO
7.Flow Metering		
-Measuring instrument	1 pc.	Flow
-Measuring instrument	1 pc.	pH
8.Recycled Sludge Pumping Station		
-Local control panel	1 lot	Metal enclosed indoor type
-Measuring instrument	1 pc.	Level
-Measuring instrument	1 pc.	Flow
9.Primary Sludge Pumping Station		
-Local control panel	1 lot	Metal enclosed indoor type
-Measuring instrument	1 pc.	Flow
11. Thickened Sludge Pumping Station		
-Local control panel	1 lot	Metal enclosed indoor type
-Measuring instrument	1 pc.	Flow
12.Sludge Digester		
-Measuring instrument	2 pcs.	Temperature
13.Boiler & Engine Generator Room		
-Transformer	2 pcs.	1000 kVA, 10/0.4kV, 3 ϕ, 50Hz Class H, Dry type
-HT switchgear	1 lot	Metal enclosed indoor type 10kV
-Local control panel	1 lot	Metal enclosed indoor type

Equipment	Qty.	Specification
15.Gas Storage Tank		
-Measuring instrument	2 pcs.	Flow
16.Homogenized Sludge Holding Tank		
-Measuring instrument	1.pc.	Flow
18. Sludge Dehydration		
-Local control panel	1 lot	Metal enclosed indoor type
19. Air Blower Room		
-Local control panel	1 lot	Metal enclosed indoor type
20.Power Station		
-Transformer	2 pcs.	1600 kVA, 10/0.4kV, 3 ϕ, 50Hz Class H, Dry type
-HT switchgear	1 lot	Metal enclosed indoor type 10kV
-LT power distribution / motor control panel	1 lot	Metal enclosed indoor type
21.Substation		
-Transformer	1 pc.	1600 kVA, 10/0.4kV, 3 ϕ, 50Hz Class H, Dry type
-HT switchgear	1 lot	Metal enclosed indoor type 10kV
-LT power distribution / motor control panel	1 lot	Metal enclosed indoor type
23.Administration Building		
-Main control panel with mimic graphic	1 lot	Metal enclosed indoor type
-Operator console	1 lot	Metal enclosed indoor type
-Data logging system	1 lot	
-UPS	1 lot	Metal enclosed indoor type
24.Service Water Pumping Station		
-Local control panel	1 lot	Metal enclosed indoor type
-Measuring instrument	1 pc	Flow
Outdoor lighting fixture with pole	1 lot	200W natrium lamp

Date : Nov. 99 Scale:	THE FEASIBILITY STUDY ON THE WASTEWATER TREATMENT PLANT OF SARAJEVO	
	ELECTRICAL EQUIPMENT LIST	E-6