

B3 Plan (6-6)



Bangkok Metropolitan Administration



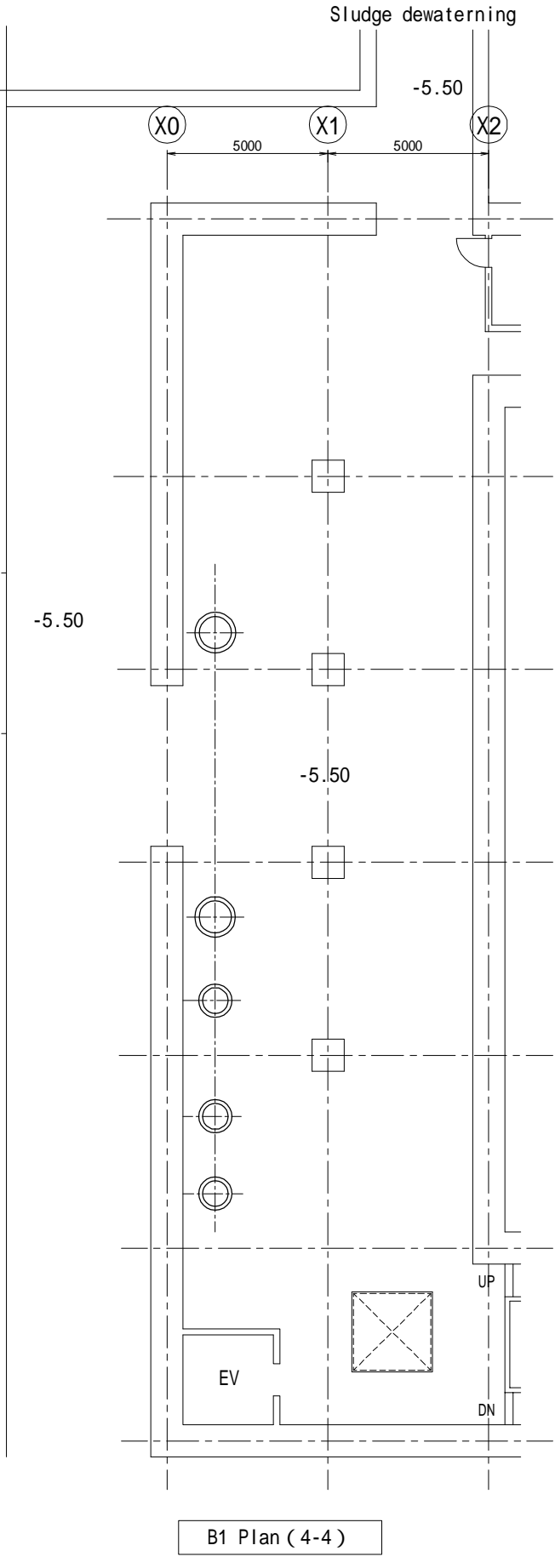
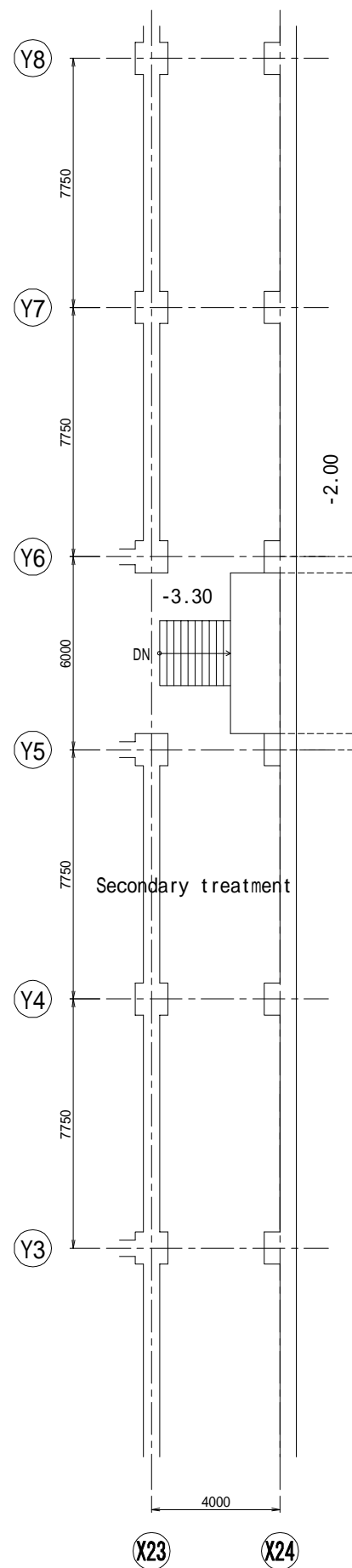
Japan International Cooperation Agency  
Tokyo Engineering Consultants Co.,Ltd  
Nippon Koei Co.,Ltd

DESIGNED :	REV.NO.	DATE	DESCRIPTION	APPROVED
DRAWN :				
CHECKED :				
PROJECT MANAGER :				
DATE :				

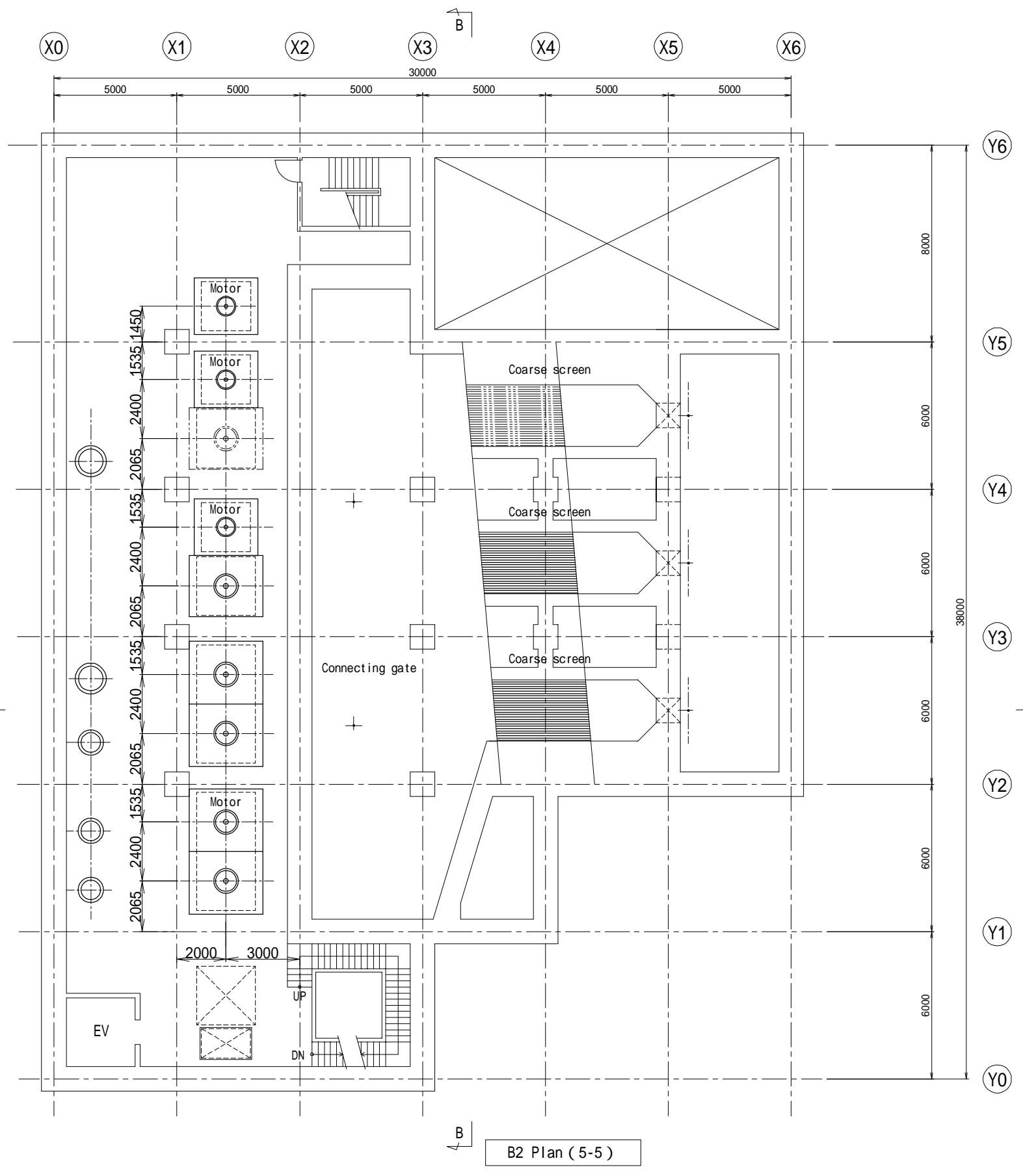
Department of Drainage and Sewerage	
SCALE A1 = 1:100    A3 = 1:200	
DWG. NO. NB-TP-1004	SHEET NO. 29

Preparatory Survey for Bangkok WasteWater Treatment Project

Nong Bon WWTP  
Lift pump and grit chamber



B1 Plan (4-4)



B2 Plan (5-5)



Bangkok Metropolitan Administration



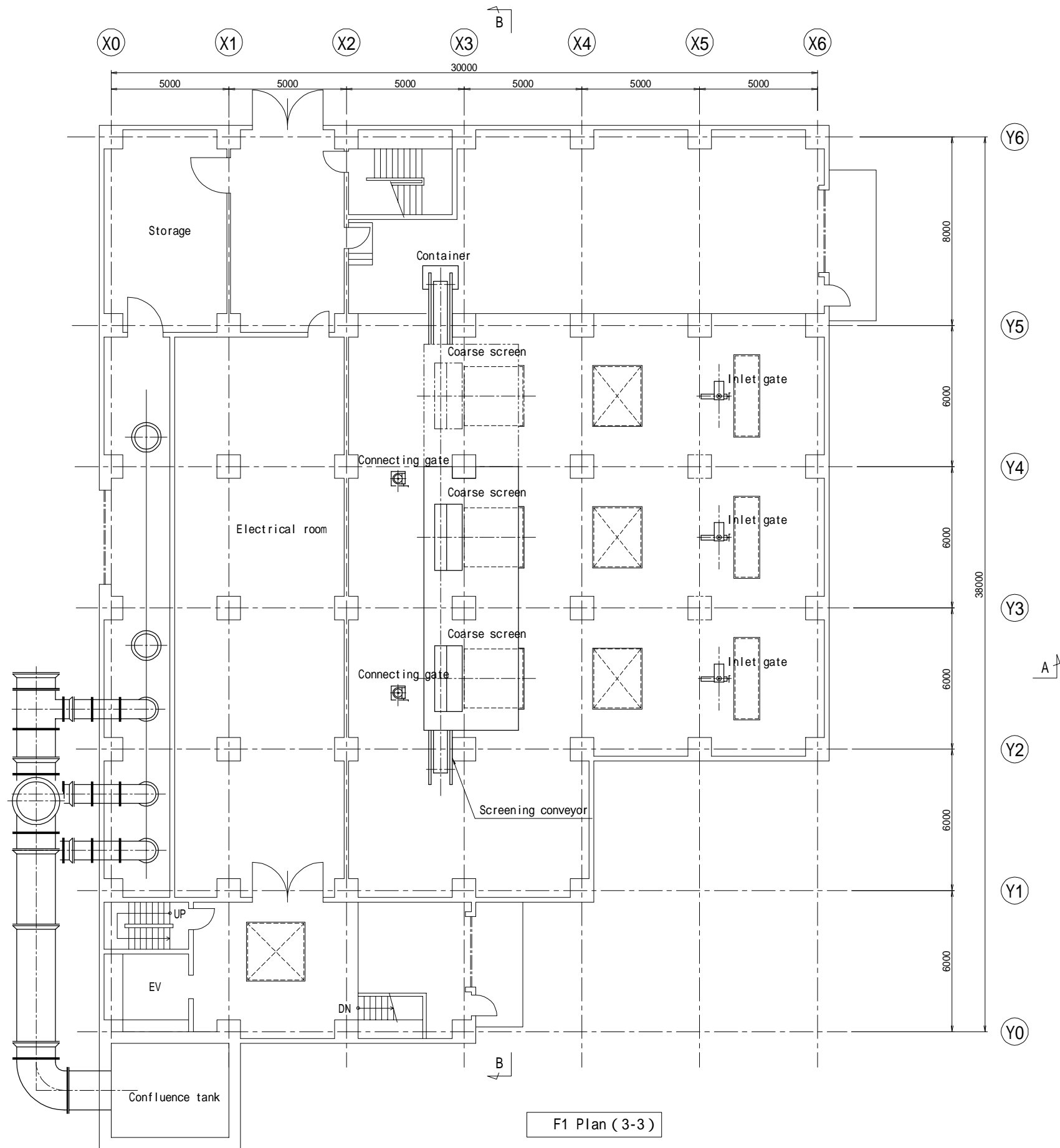
Japan International Cooperation Agency  
Tokyo Engineering Consultants Co.,Ltd  
Nippon Koei Co.,Ltd

DESIGNED :	REV.NO.	DATE	DESCRIPTION	APPROVED
DRAWN :				
CHECKED :				
PROJECT MANAGER :				
DATE :				

Department of Drainage and Sewerage	
SCALE A1 = 1:100    A3 = 1:200	
DWG. NO. NB-TP-1005	SHEET NO. 30

Preparatory Survey for Bangkok WasteWater Treatment Project

Nong Bon WWTP  
Lift pump and grit chamber



F1 Plan (3-3)



Bangkok Metropolitan Administration



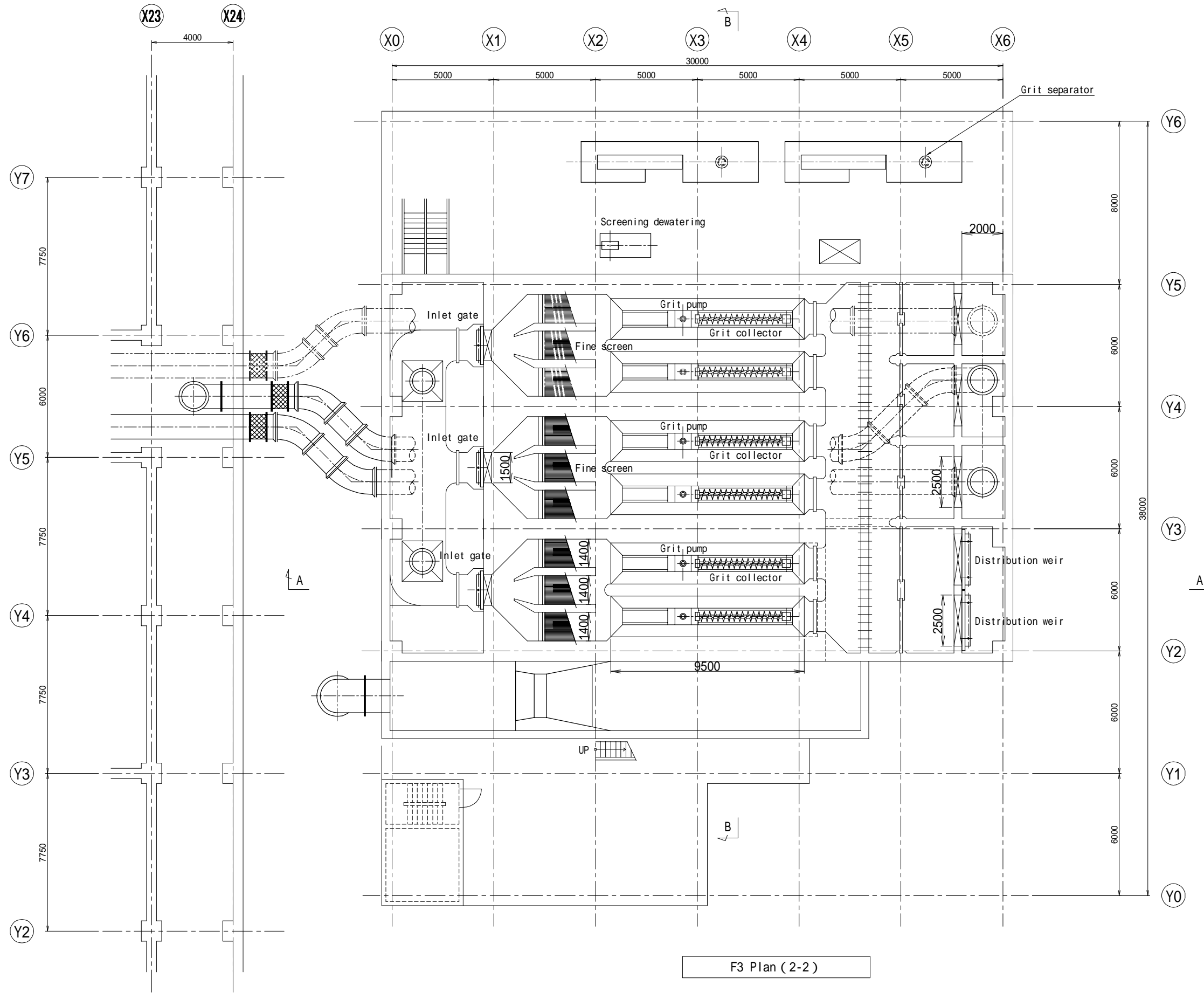
Japan International Cooperation Agency  
Tokyo Engineering Consultants Co.,Ltd  
Nippon Koei Co.,Ltd

DESIGNED :	REV.NO.	DATE	DESCRIPTION	APPROVED
DRAWN :				
CHECKED :				
PROJECT MANAGER :				
DATE :				

Department of Drainage and Sewerage	
SCALE A1 = 1:100    A3 = 1:200	
DWG. NO. NB-TP-1006	SHEET NO. 31

Preparatory Survey for Bangkok WasteWater Treatment Project

Nong Bon WWTP  
Lift pump and grit chamber



F3 Plan (2-2)



Bangkok Metropolitan Administration



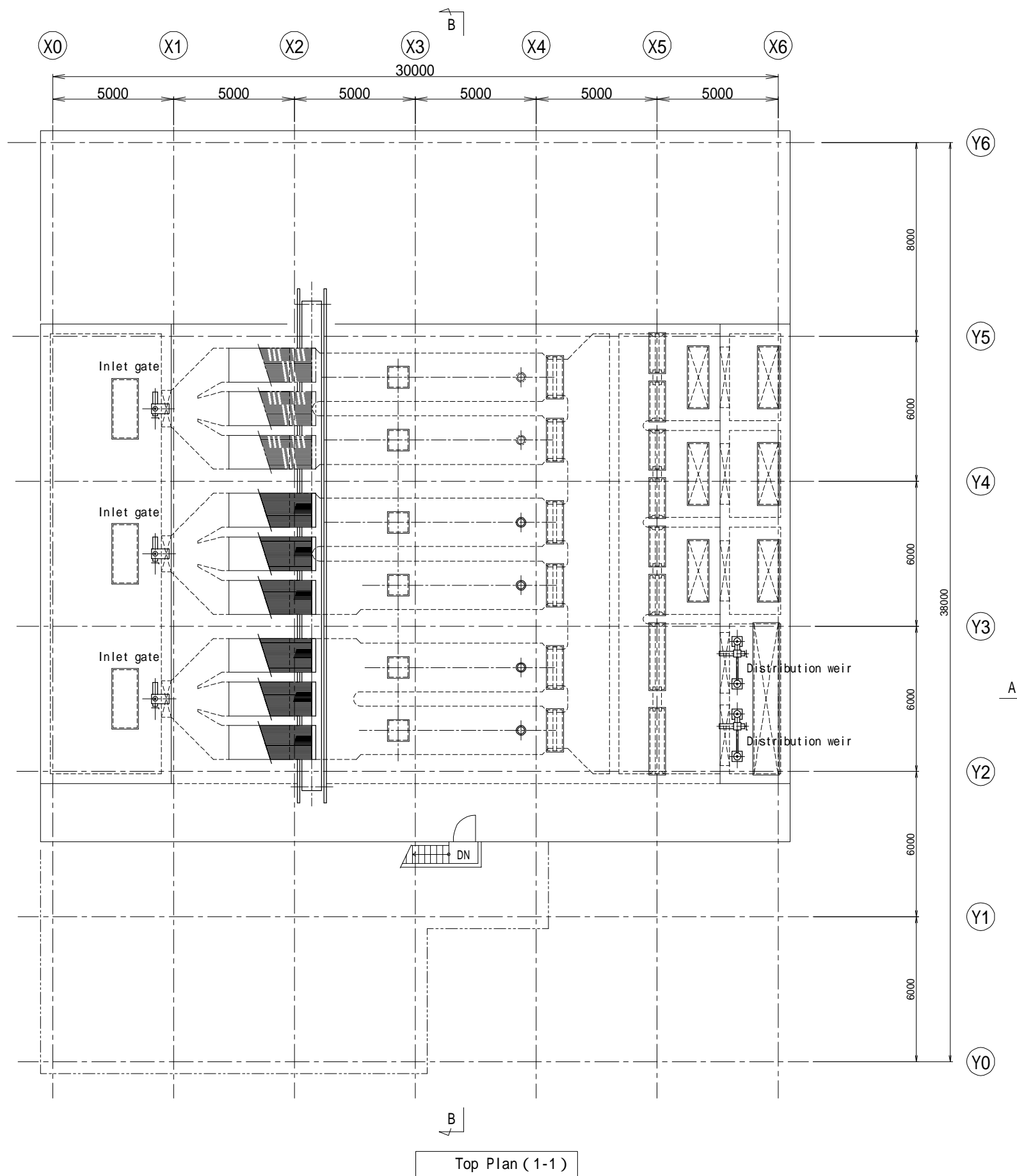
Japan International Cooperation Agency  
Tokyo Engineering Consultants Co.,Ltd  
Nippon Koei Co.,Ltd

DESIGNED :	REV.NO.	DATE	DESCRIPTION	APPROVED
DRAWN :				
CHECKED :				
PROJECT MANAGER :				
DATE :				

Department of Drainage and Sewerage	
SCALE A1 = 1:100    A3 = 1:200	
DWG. NO. NB-TP-1007	SHEET NO. 32

Preparatory Survey for Bangkok WasteWater Treatment Project

Nong Bon WWTP  
Lift pump and grit chamber



Top Plan (1-1)



Bangkok Metropolitan Administration



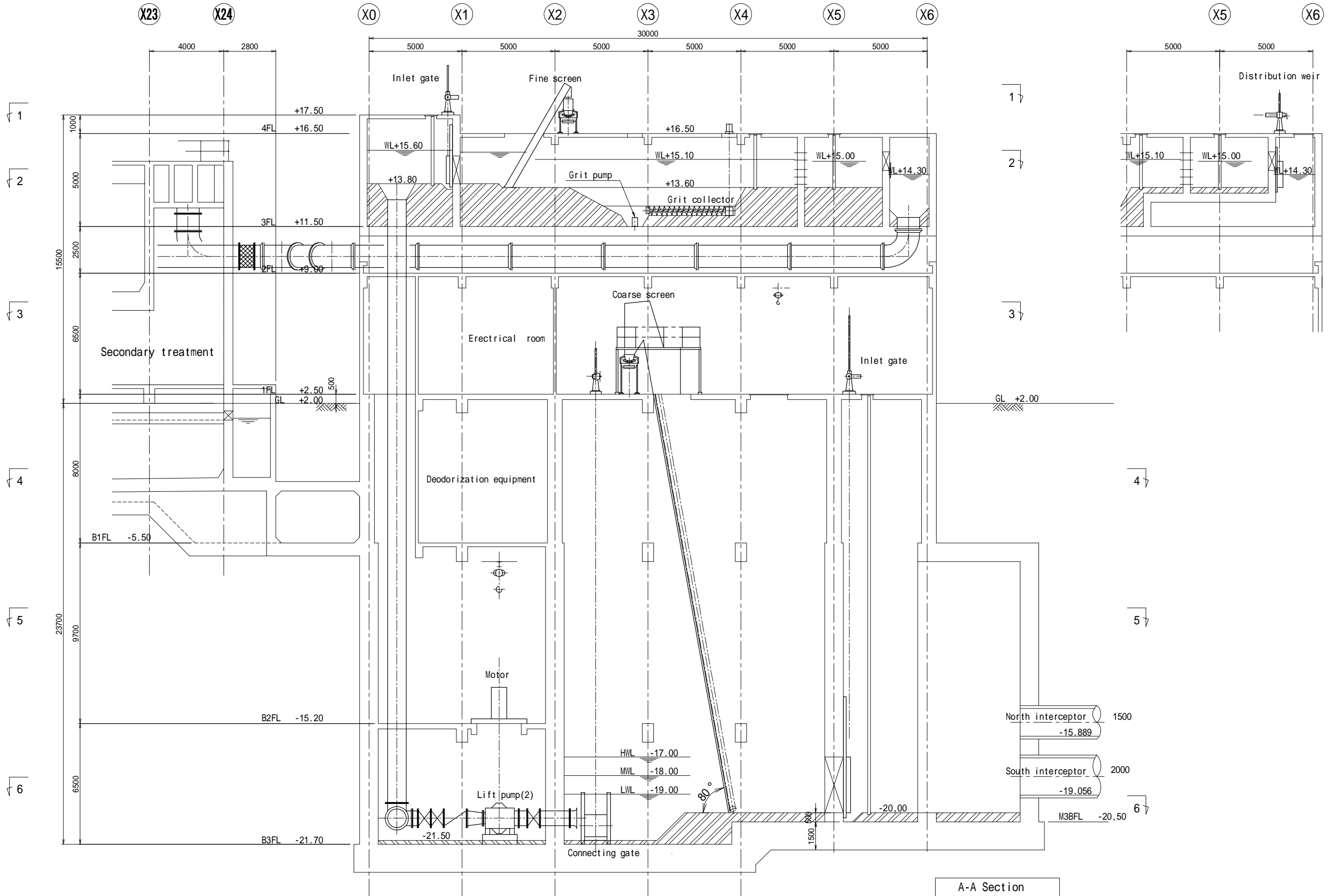
Japan International Cooperation Agency  
Tokyo Engineering Consultants Co.,Ltd  
Nippon Koei Co.,Ltd

DESIGNED :	REV.NO.	DATE	DESCRIPTION	APPROVED
DRAWN :				
CHECKED :				
PROJECT MANAGER :				
DATE :				



Department of Drainage and Sewerage	
SCALE A1 = 1:100    A3 = 1:200	
DWG. NO. NB-TP-1008	SHEET NO. 33

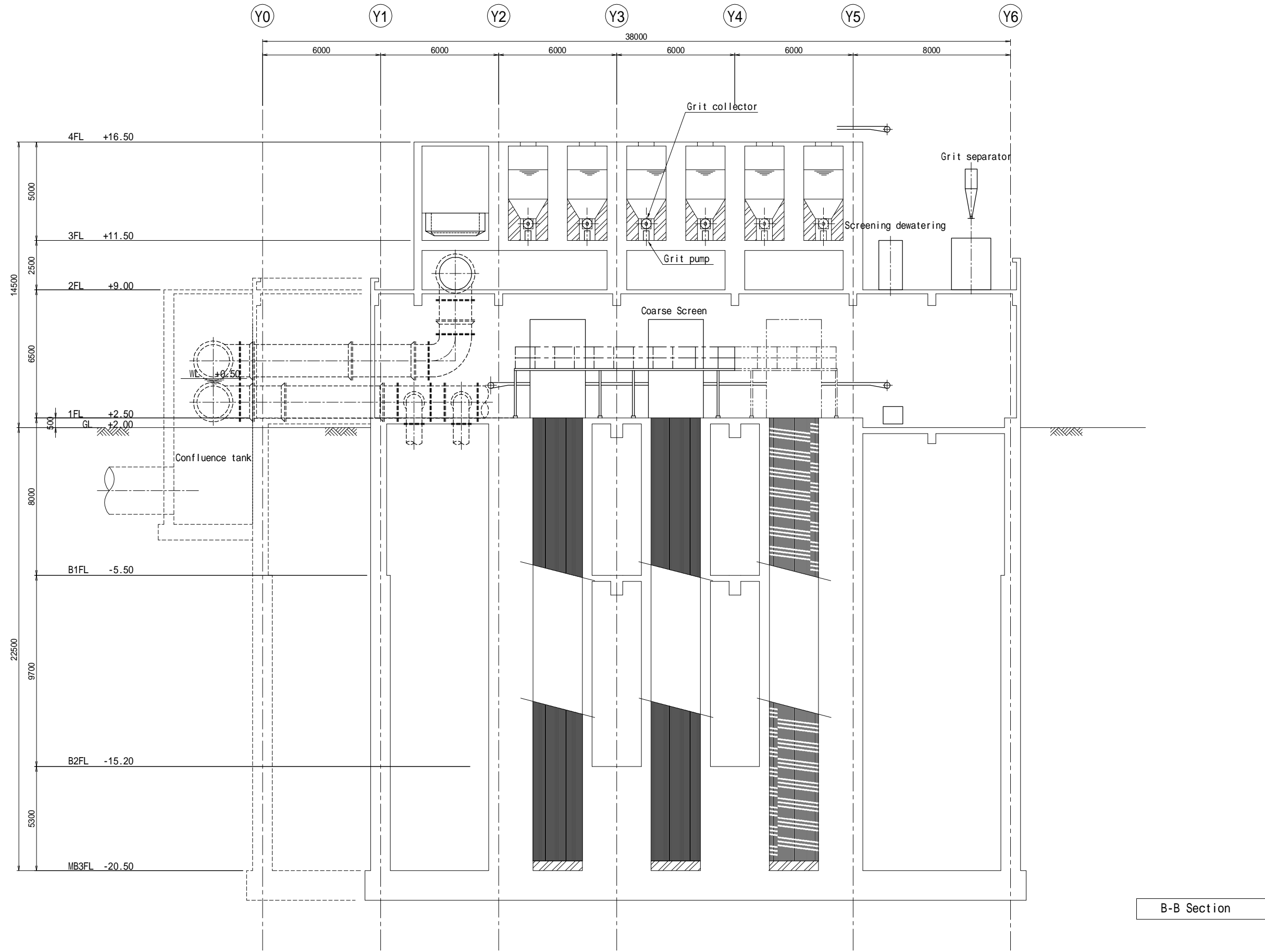
Preparatory Survey for Bangkok WasteWater Treatment Project

Nong Bon WWTP  
Lift pump and grit chamber



A-A Section

 <b>Bangkok Metropolitan Administration</b>	 <b>Japan International Cooperation Agency</b> <b>Tokyo Engineering Consultants Co.,Ltd</b> <b>Nippon Koei Co.,Ltd</b>	DESIGNED :	REV.NO.	DATE	DESCRIPTION	APPROVED	<b>Department of Drainage and Sewerage</b>	Preparatory Survey for Bangkok WasteWater Treatment Project	
		DRAWN :						SCALE A1 = 1:100    A3 = 1:200	
		CHECKED :							
		PROJECT MANAGER :							
		DATE :					DWG. NO. NB-TP-1009	SHEET NO. 34	
								Nong Bon WWTP Lift pump and grit chamber	



B-B Section



Bangkok Metropolitan Administration



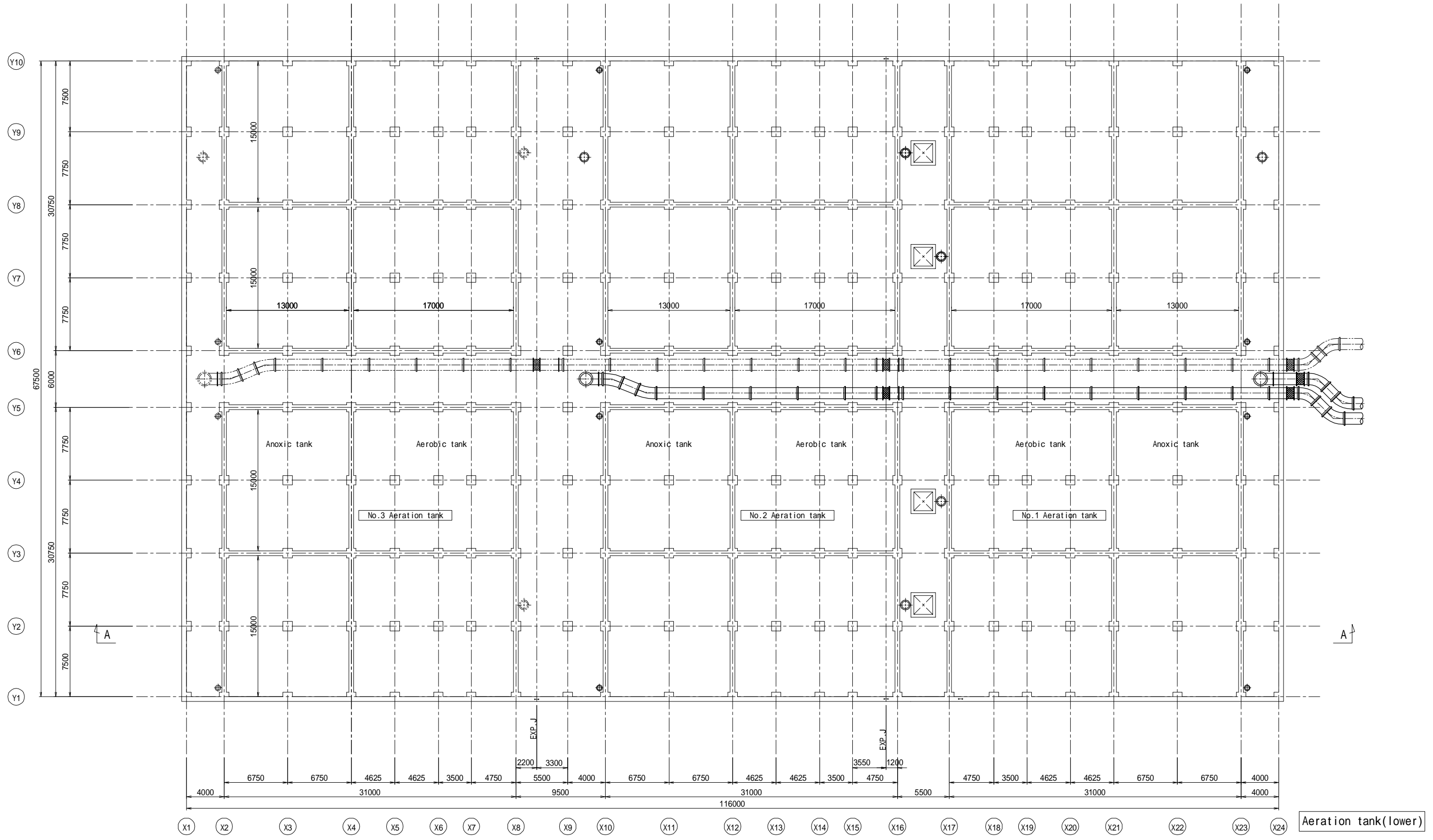
Japan International Cooperation Agency  
Tokyo Engineering Consultants Co.,Ltd  
Nippon Koei Co.,Ltd

DESIGNED :	REV.NO.	DATE	DESCRIPTION	APPROVED
DRAWN :				
CHECKED :				
PROJECT MANAGER :				
DATE :				

Department of Drainage and Sewerage	
SCALE A1 = 1:100    A3 = 1:200	
DWG. NO. NB-TP-1010	SHEET NO. 35

Preparatory Survey for Bangkok WasteWater Treatment Project

Nong Bon WWTP  
Lift pump and grit chamber



Aeration tank(lower)



Bangkok Metropolitan Administration



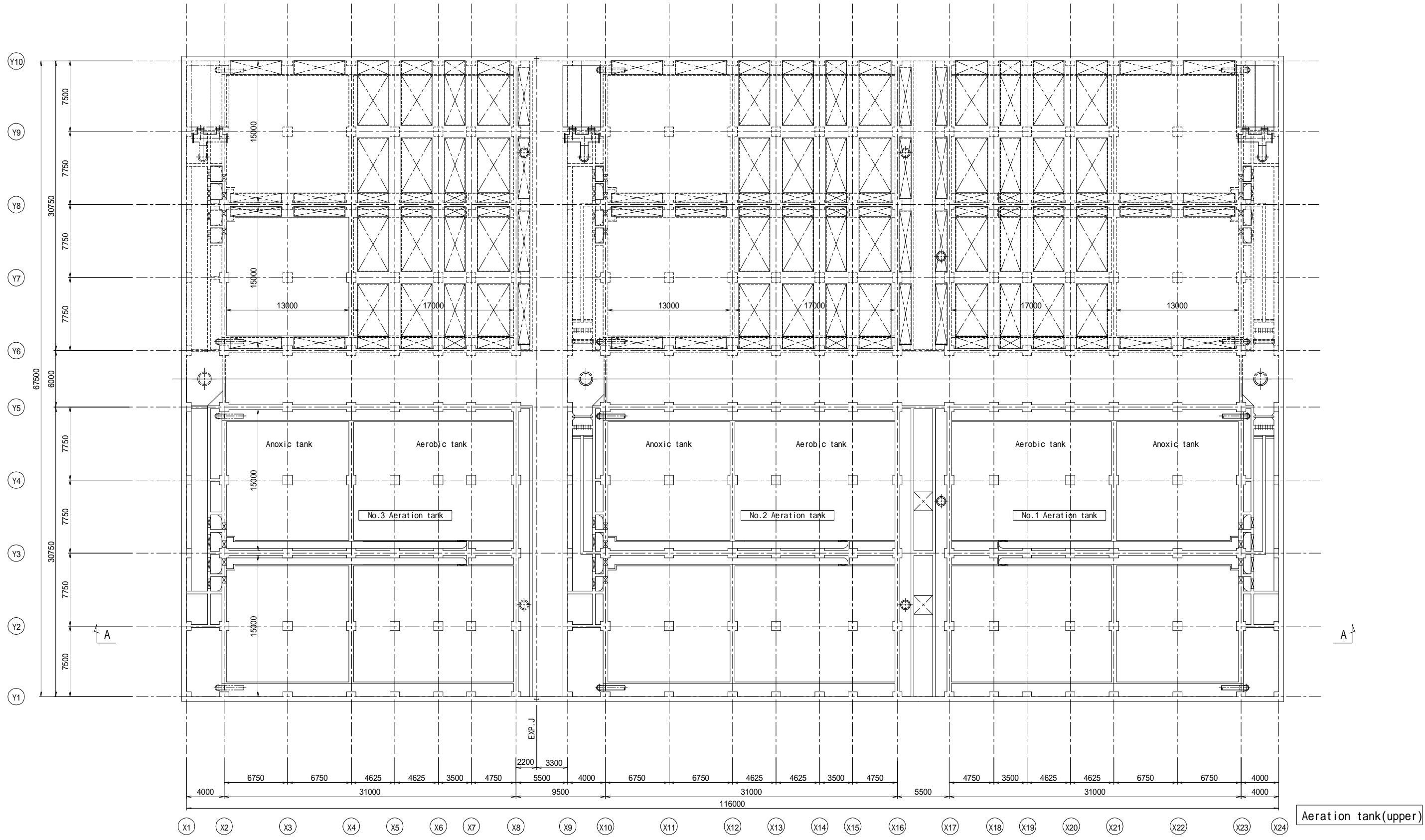
Japan International Cooperation Agency  
Tokyo Engineering Consultants Co.,Ltd  
Nippon Koei Co.,Ltd

DESIGNED :	REV.NO.	DATE	DESCRIPTION	APPROVED
DRAWN :				
CHECKED :				
PROJECT MANAGER :				
DATE :				

Department of Drainage and Sewerage	
SCALE A1 = 1:200    A3 = 1:400	
DWG. NO. NB-TP-1011	SHEET NO. 36

Preparatory Survey for Bangkok WasteWater Treatment Project  
  
Nong Bon WWT  
Aeration tank





Aeration tank(upper)



Bangkok Metropolitan Administration

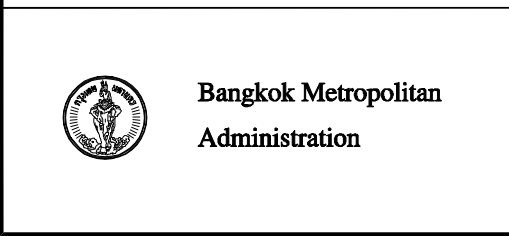
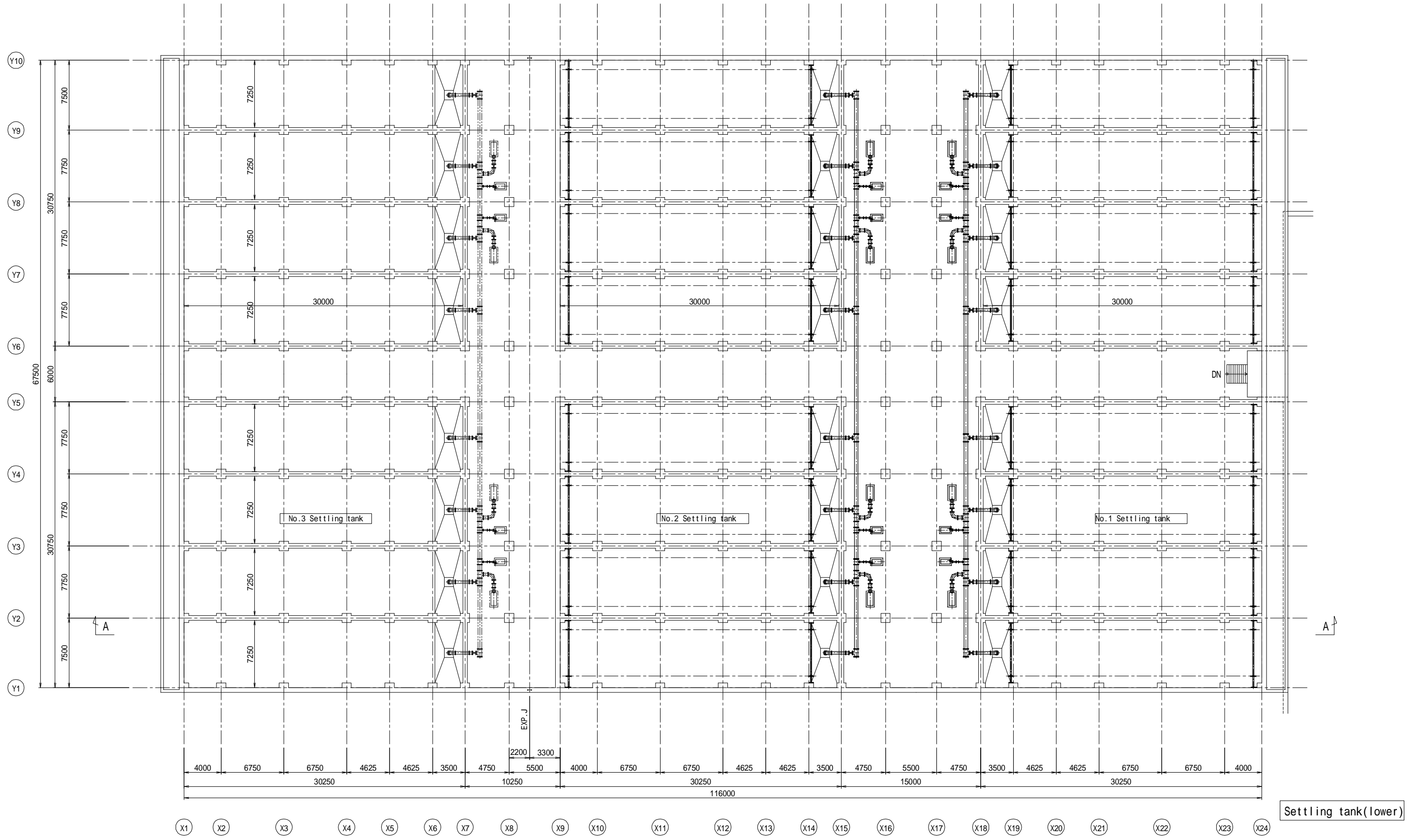


Japan International Cooperation Agency  
Tokyo Engineering Consultants Co.,Ltd  
Nippon Koei Co.,Ltd

DESIGNED :	REV.NO.	DATE	DESCRIPTION	APPROVED
DRAWN :				
CHECKED :				
PROJECT MANAGER :				
DATE :				

Department of Drainage and Sewerage	
SCALE A1 = 1:200    A3 = 1:400	
DWG. NO. NB-TP-1012	SHEET NO. 37

Preparatory Survey for Bangkok WasteWater Treatment Project  
  
Nong Bon WWTP  
Aeration tank

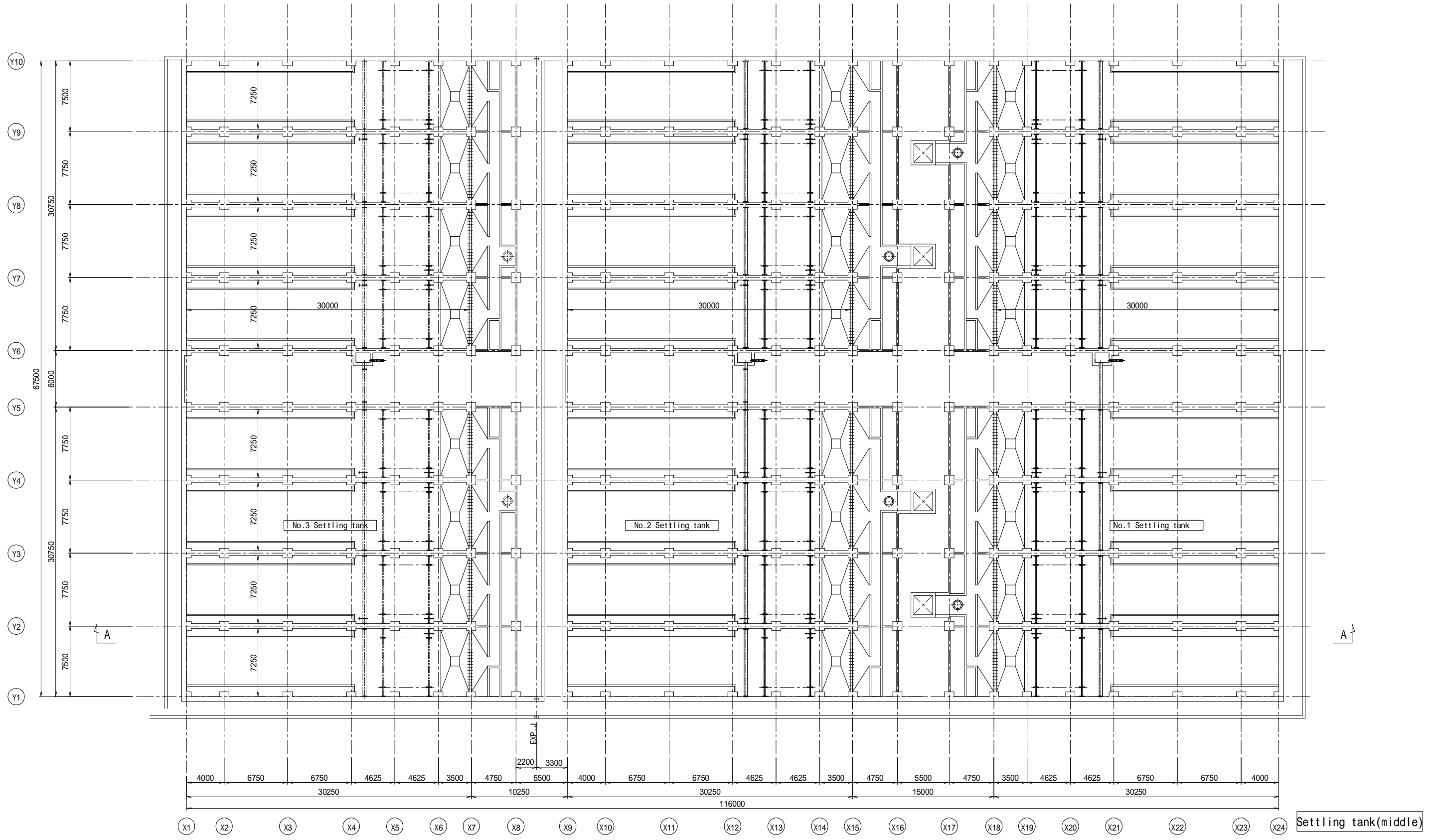


DESIGNED :	REV.NO.	DATE	DESCRIPTION	APPROVED
DRAWN :				
CHECKED :				
PROJECT MANAGER :				
DATE :				

<b>Department of Drainage and Sewerage</b>	
SCALE A1 = 1:200    A3 = 1:400	
DWG. NO. NB-TP-1013	SHEET NO. 38

Preparatory Survey for Bangkok WasteWater Treatment Project

Nong Bon WWTP  
Settling tank

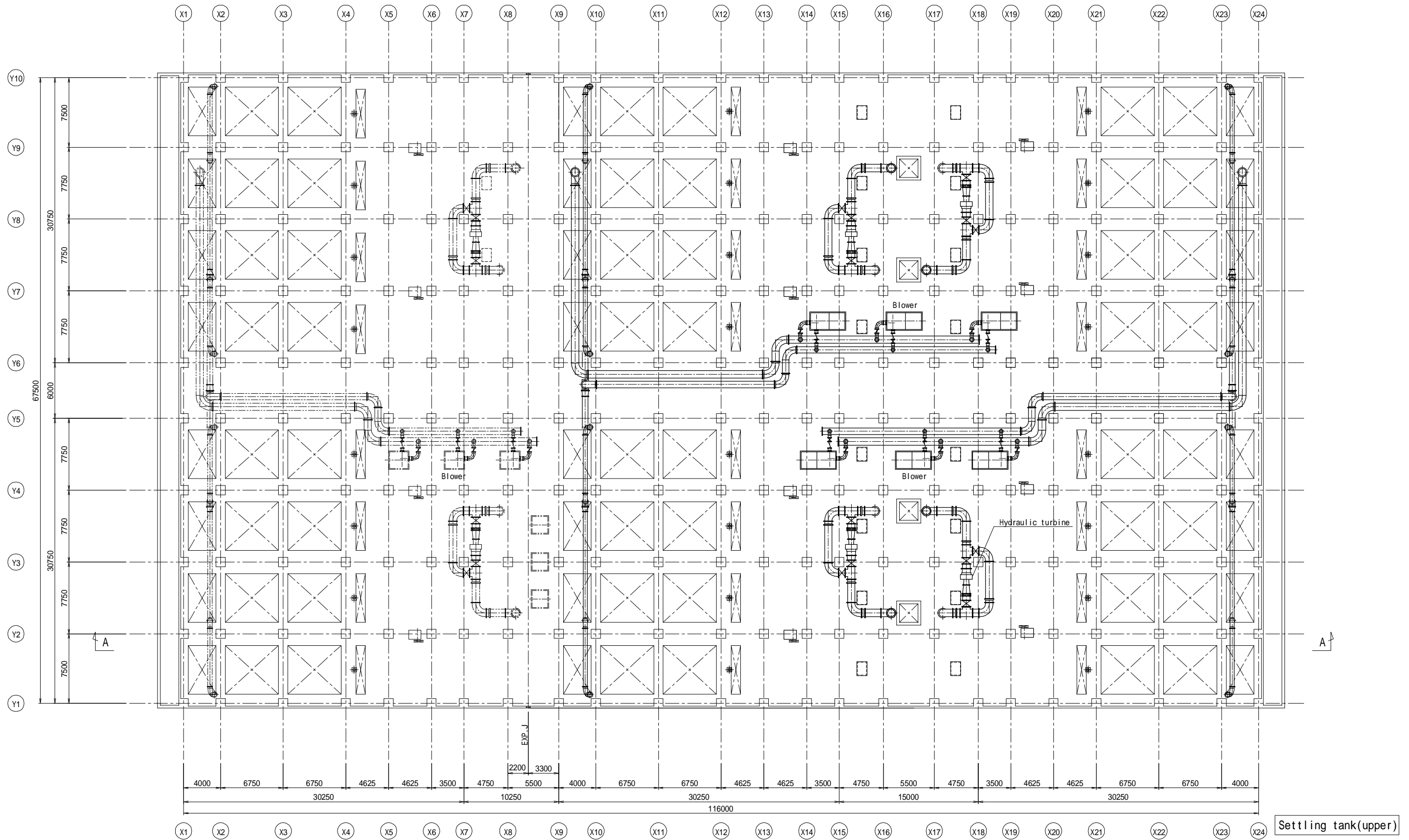


Japan International Cooperation Agency  
 Tokyo Engineering Consultants Co.,Ltd  
 Nippon Koei Co.,Ltd

DESIGNED :	REV.NO.	DATE	DESCRIPTION	APPROVED
DRAWN :				
CHECKED :				
PROJECT MANAGER :				
DATE :				

Department of Drainage and Sewerage  
 SCALE:  
 A1 = 1:200    A3 = 1:400  
 DWG. NO. NB-TP-1014  
 SHEET NO. 39

Preparatory Survey for Bangkok WasteWater Treatment Project  
 Nong Bon WWTP  
 Settling tank



Bangkok Metropolitan  
Administration



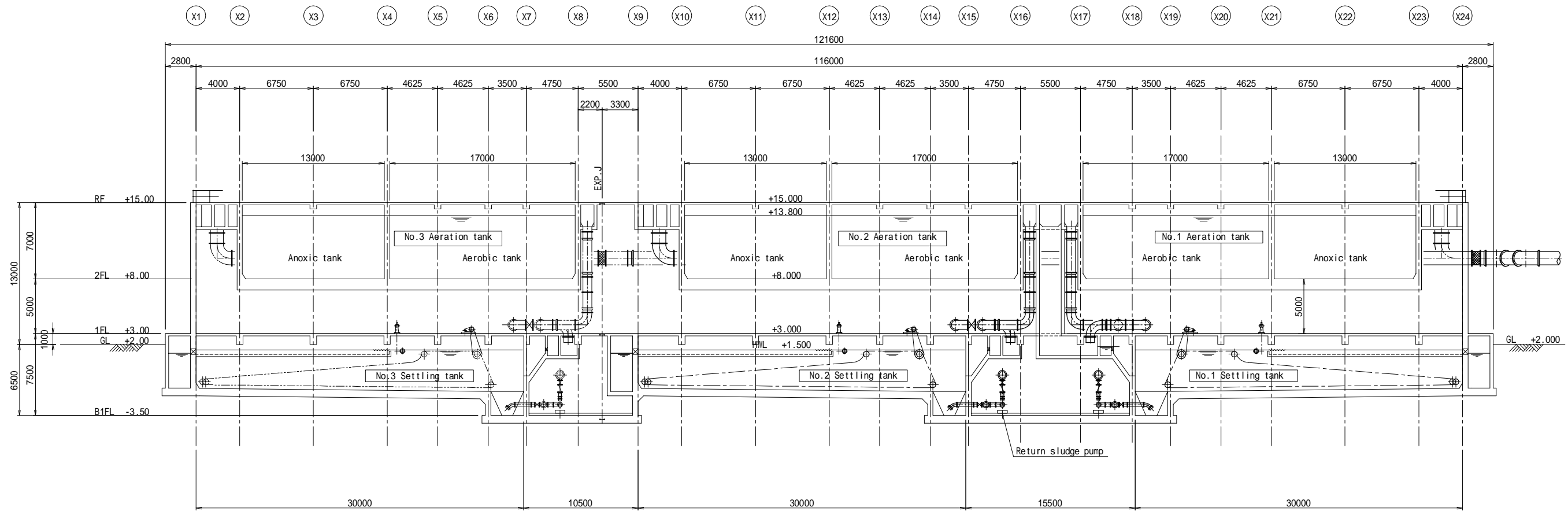
Japan International Cooperation Agency  
Tokyo Engineering Consultants Co.,Ltd  
Nippon Koei Co.,Ltd

DESIGNED :	REV.NO.	DATE	DESCRIPTION	APPROVED
DRAWN :				
CHECKED :				
PROJECT MANAGER :				
DATE :				

Department of Drainage and Sewerage	
SCALE A1 = 1:200    A3 = 1:400	
DWG. NO. NB-TP-1015	SHEET NO. 40

Preparatory Survey for Bangkok WasteWater Treatment Project

Nong Bon WWT  
Settling tank



Aeration tank and Settling tank (A-A)



Bangkok Metropolitan Administration



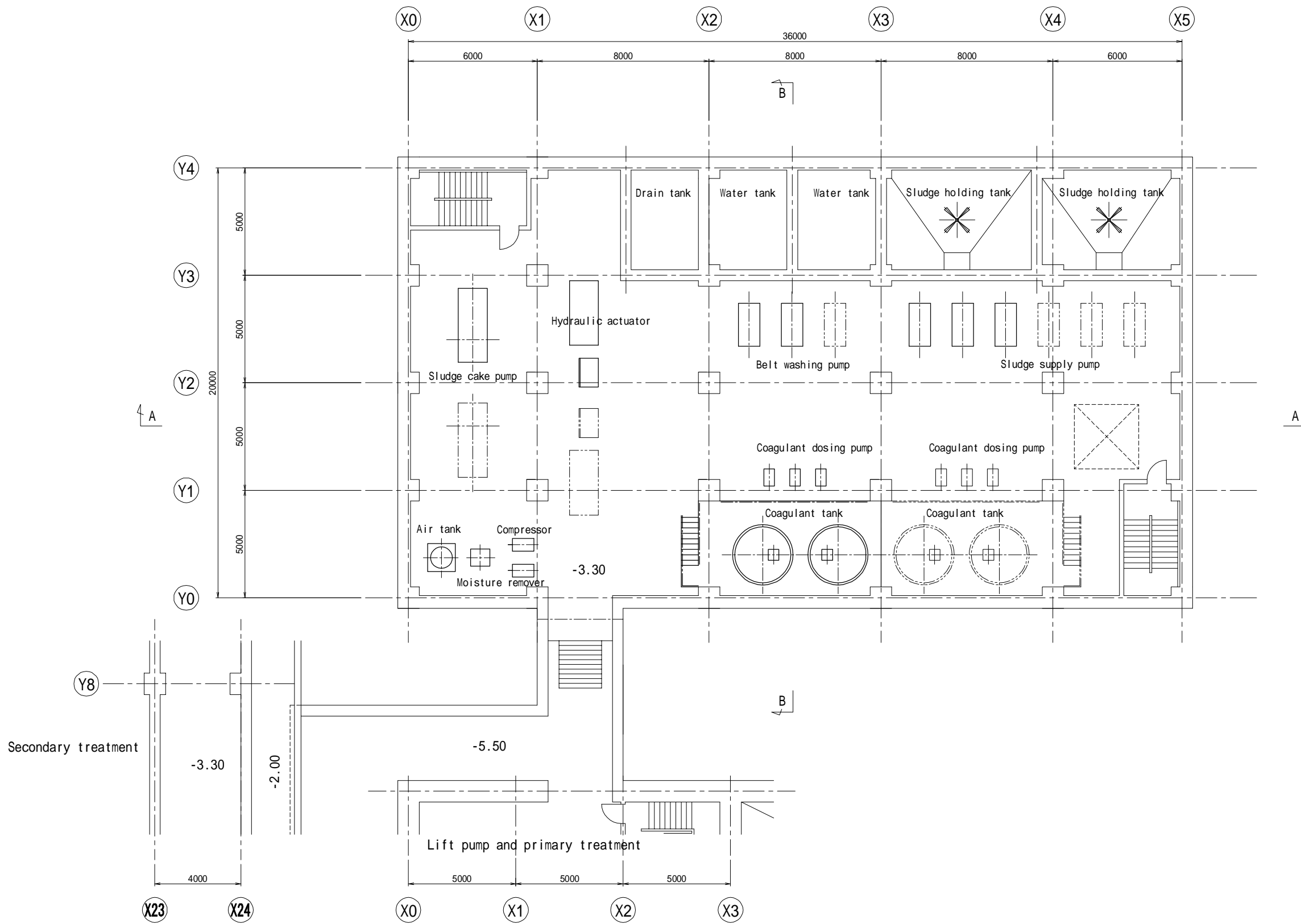
Japan International Cooperation Agency  
Tokyo Engineering Consultants Co.,Ltd  
Nippon Koei Co.,Ltd

DESIGNED :	REV.NO.	DATE	DESCRIPTION	APPROVED
DRAWN :				
CHECKED :				
PROJECT MANAGER :				
DATE :				



Department of Drainage and Sewerage	
SCALE A1 = 1:200    A3 = 1:400	
DWG. NO. NB-TP-1016	SHEET NO. 41

Preparatory Survey for Bangkok WasteWater Treatment Project

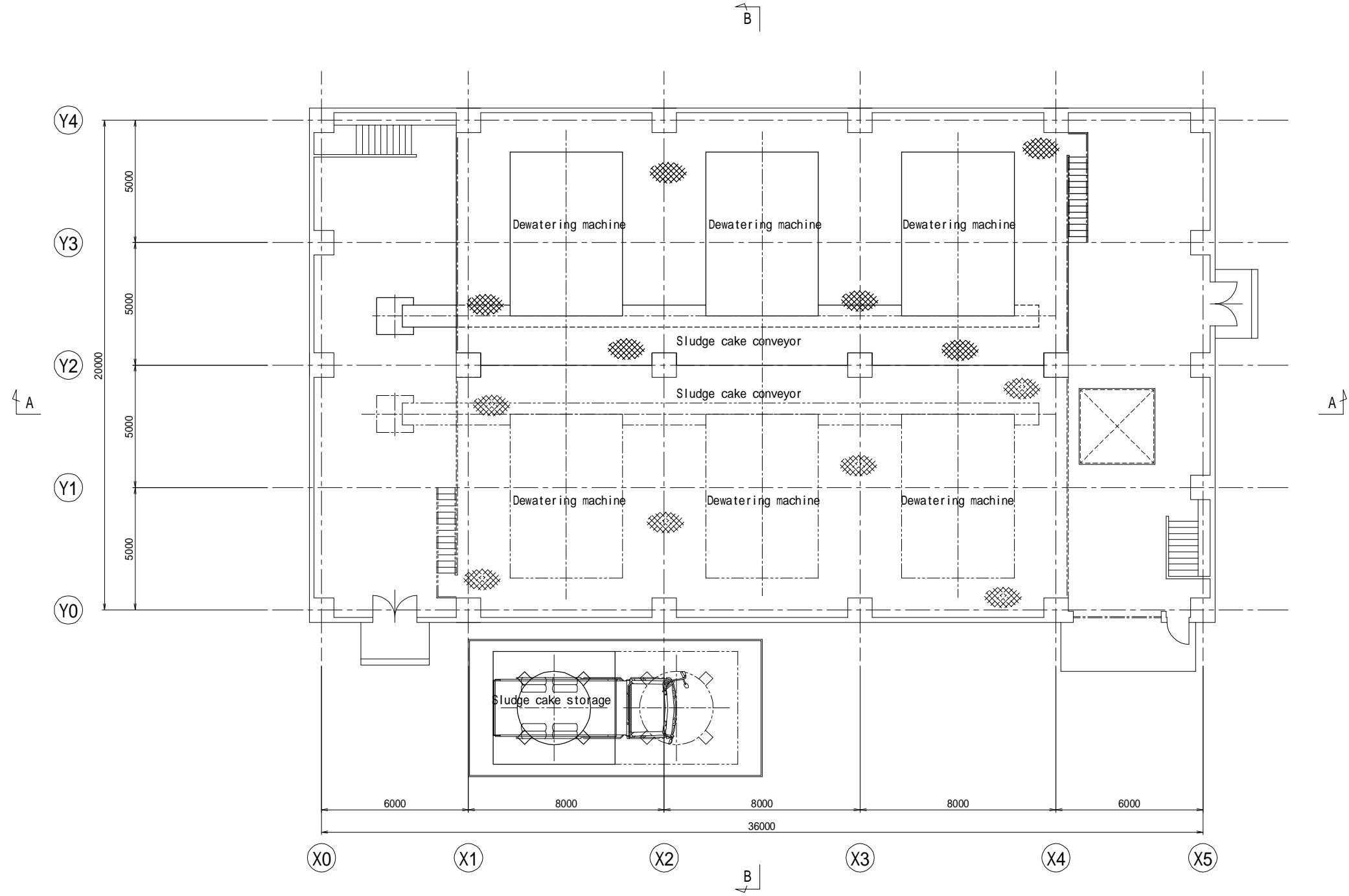
Nong Bon WWTP  
Aeration tank and Settling tank



B1 Plan

 <b>Bangkok Metropolitan Administration</b>	 <b>Japan International Cooperation Agency</b> <b>Tokyo Engineering Consultants Co.,Ltd</b> <b>Nippon Koei Co.,Ltd</b>	DESIGNED :	REV.NO.	DATE	DESCRIPTION	APPROVED	Department of Drainage and Sewerage	Preparatory Survey for Bangkok WasteWater Treatment Project	
		DRAWN :						SCALE.	
		CHECKED :						A1 = 1:100    A3 = 1:200	
		PROJECT MANAGER :						DWG. NO.	SHEET NO.
DATE :						NB-TP-1017	42		

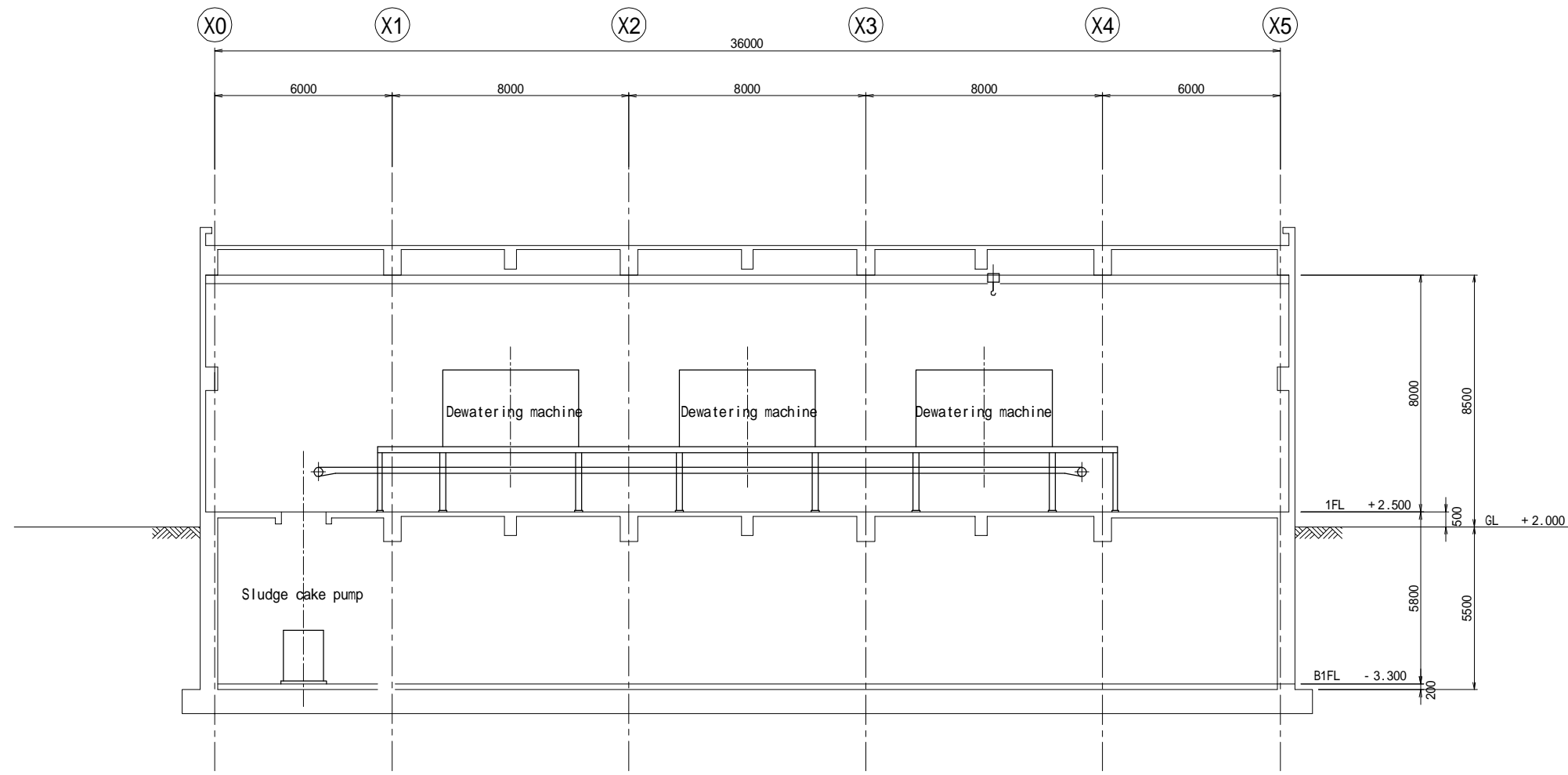
Nong Bon WWTP  
Sludge dewatering building





F1 Plan

DESIGNED :	REV.NO.	DATE	DESCRIPTION	APPROVED
DRAWN :				
CHECKED :				
PROJECT MANAGER :				
DATE :				

<b>Department of Drainage and Sewerage</b>	
SCALE A1 = 1:100    A3 = 1:200	
DWG. NO. NB-TP-1018	SHEET NO. 43

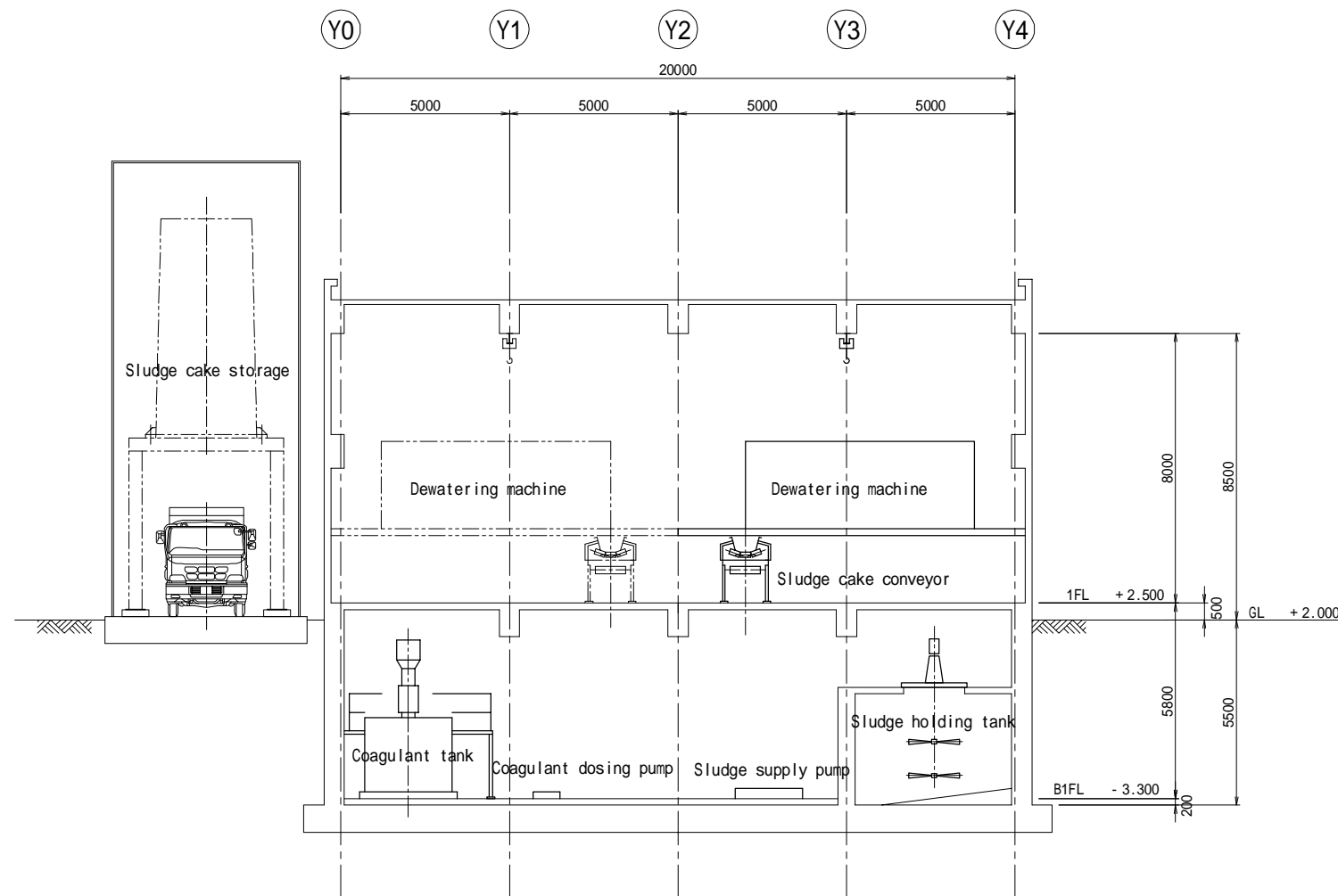


A-A Section

 <b>Bangkok Metropolitan Administration</b>	 <b>Japan International Cooperation Agency</b> Tokyo Engineering Consultants Co.,Ltd Nippon Koei Co.,Ltd	DESIGNED :	REV.NO.	DATE	DESCRIPTION	APPROVED	Department of Drainage and Sewerage	Preparatory Survey for Bangkok WasteWater Treatment Project	
		DRAWN :						SCALE A1 = 1:100    A3 = 1:200	
		CHECKED :							
		PROJECT MANAGER :							
DATE :							DWG. NO. NB-TP-1019	SHEET NO. 44	

Nong Bon WWTP  
Sludge dewatering building





B-B Section



Bangkok Metropolitan Administration



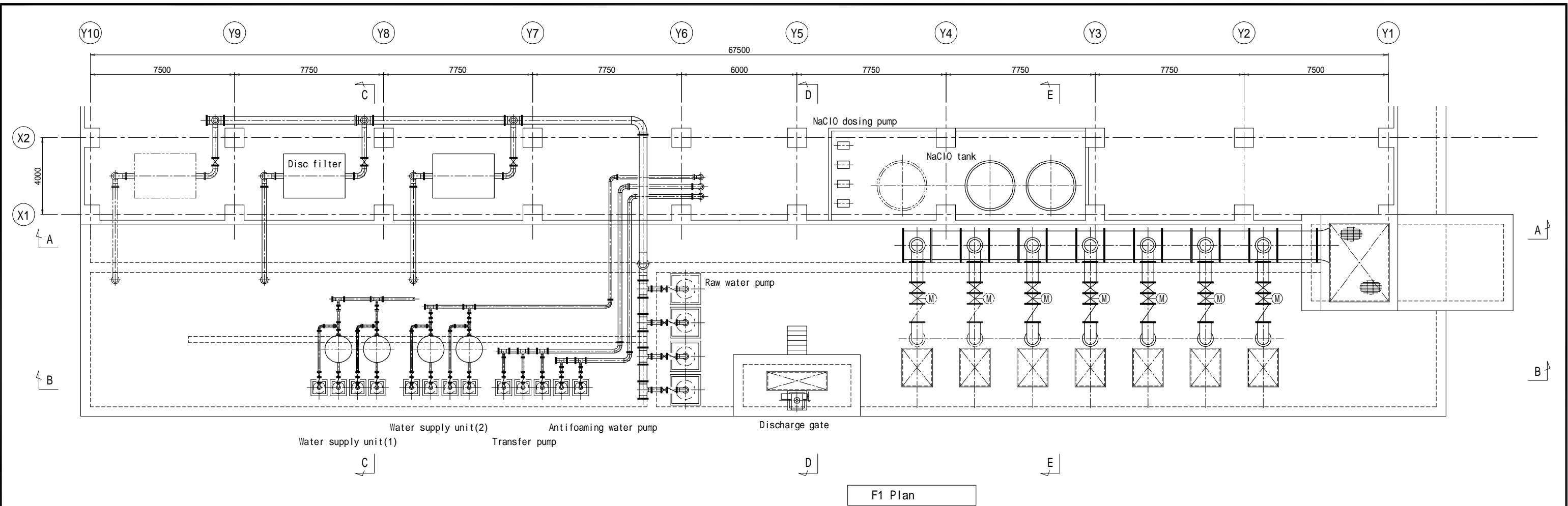
Japan International Cooperation Agency  
Tokyo Engineering Consultants Co.,Ltd  
Nippon Koei Co.,Ltd

DESIGNED :	REV.NO.	DATE	DESCRIPTION	APPROVED
DRAWN :				
CHECKED :				
PROJECT MANAGER :				
DATE :				

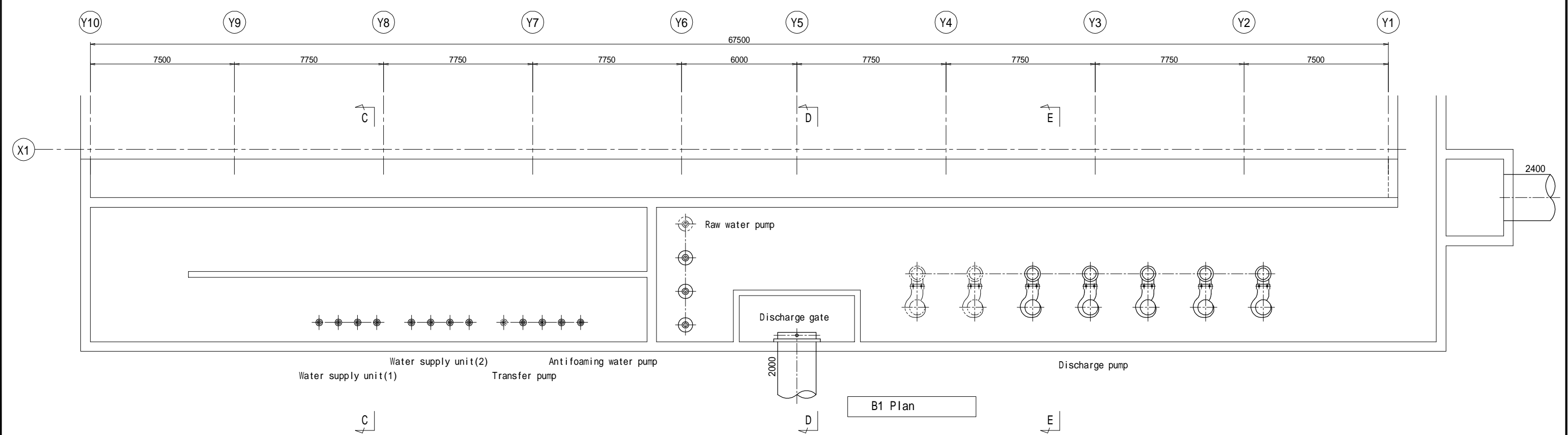
Department of Drainage and Sewerage	
SCALE A1 = 1:100    A3 = 1:200	
DWG. NO. NB-TP-1020	SHEET NO. 45

Preparatory Survey for Bangkok WasteWater Treatment Project



Nong Bon WWTP  
Sludge dewatering building

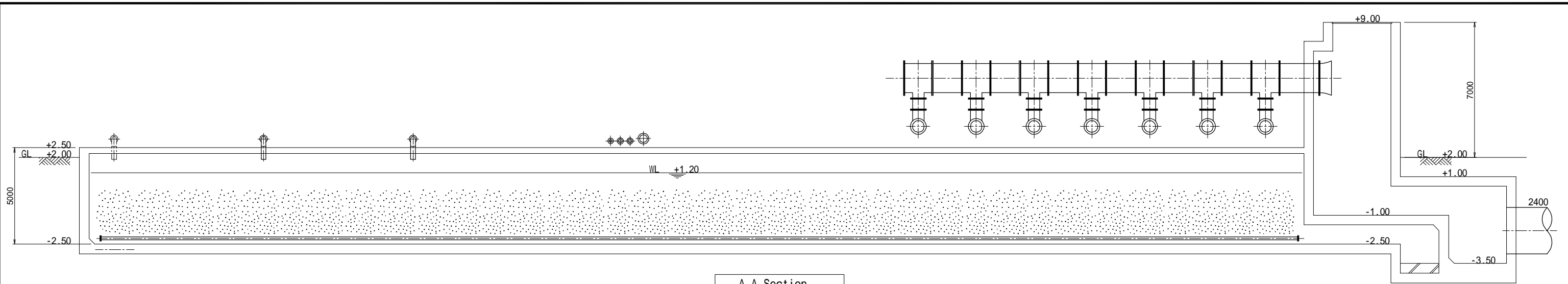


F1 Plan

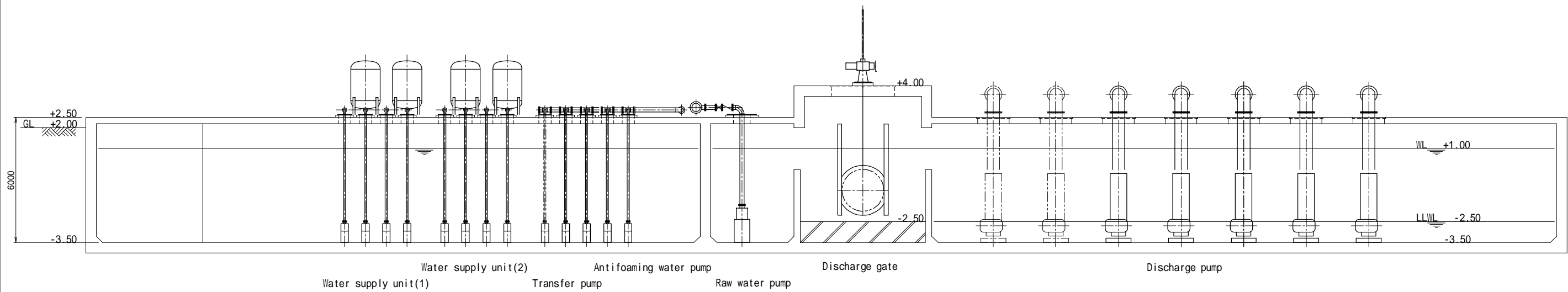


B1 Plan

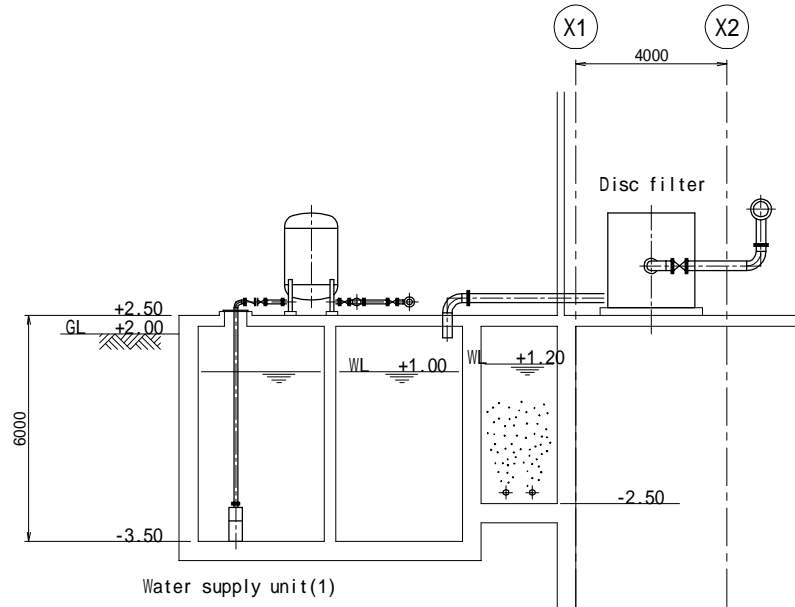
 <b>Bangkok Metropolitan Administration</b>	 <b>Japan International Cooperation Agency</b> <b>Tokyo Engineering Consultants Co.,Ltd</b> <b>Nippon Koei Co.,Ltd</b>	DESIGNED :	REV.NO.	DATE	DESCRIPTION	APPROVED	<b>Department of Drainage and Sewerage</b>	Preparatory Survey for Bangkok WasteWater Treatment Project  Nong Bon WWTP Effluent and Recycle facilities	
		DRAWN :							SCALE A1 = 1:100    A3 = 1:200
		CHECKED :							
		PROJECT MANAGER :							
		DATE :							
							DWG. NO. NB-TP-1021    SHEET NO. 46		



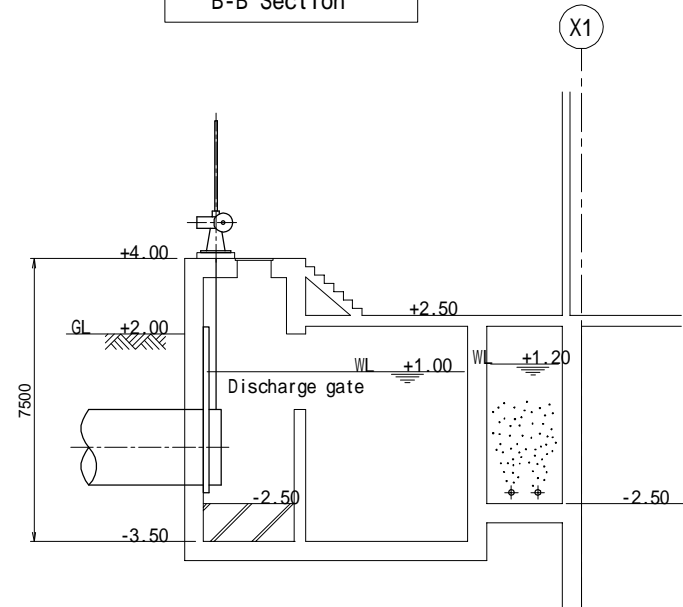
A-A Section



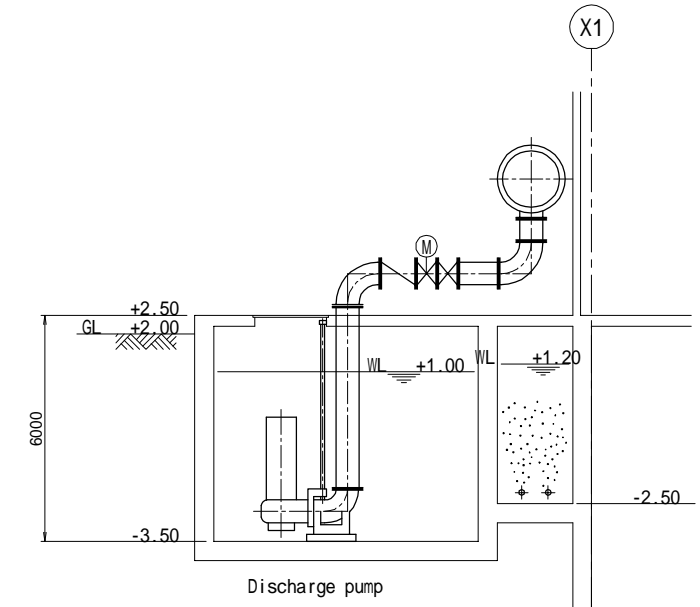
B-B Section





C-C Section

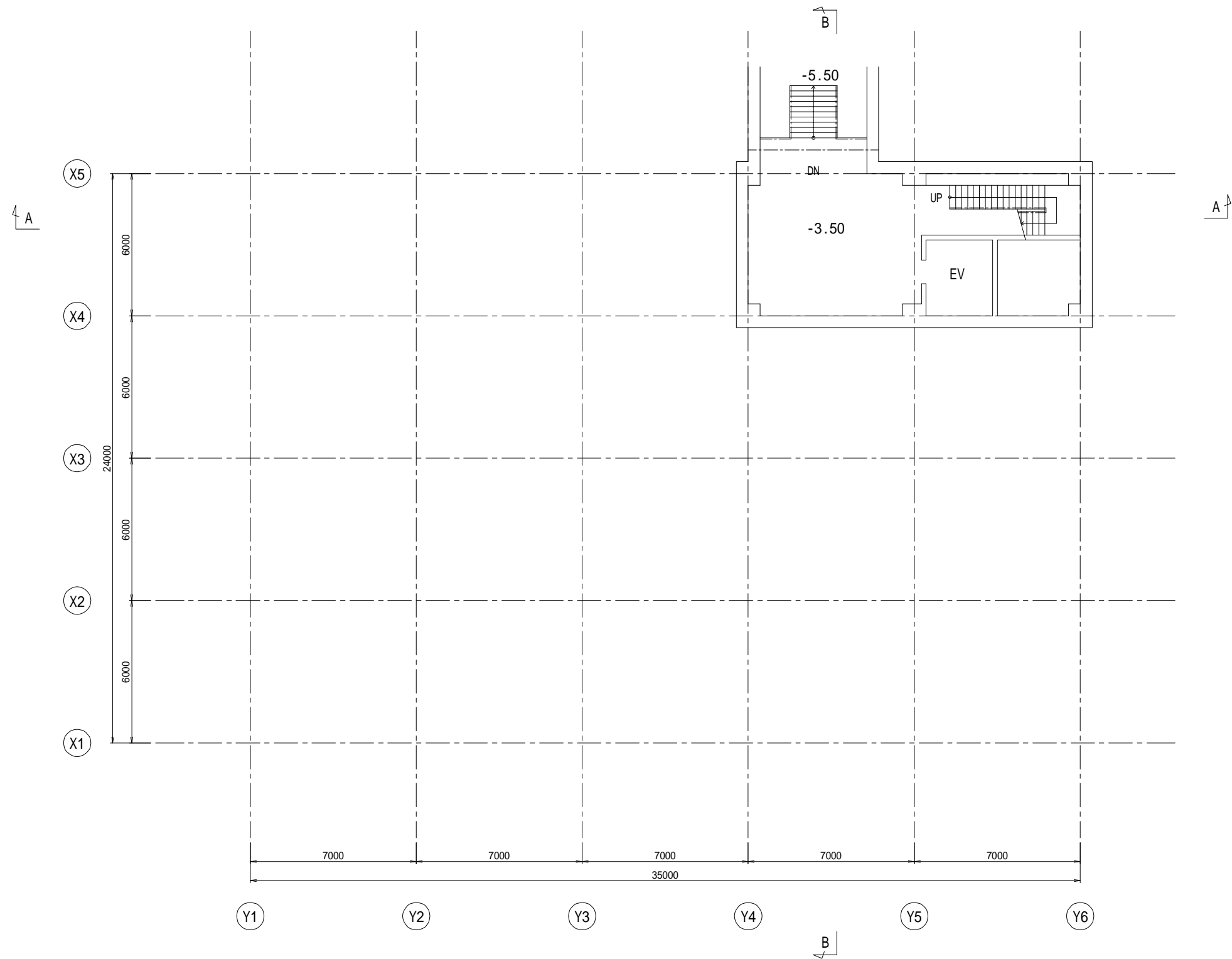


D-D Section



E-E Section

 <b>Bangkok Metropolitan Administration</b>	 <b>Japan International Cooperation Agency</b> <b>Tokyo Engineering Consultants Co.,Ltd</b> <b>Nippon Koei Co.,Ltd</b>	DESIGNED :	REV.NO.	DATE	DESCRIPTION	APPROVED	<b>Department of Drainage and Sewerage</b> Preparatory Survey for Bangkok WasteWater Treatment Project	
		DRAWN :						SCALE A1 = 1:100    A3 = 1:200
		CHECKED :						
		PROJECT MANAGER :						
		DATE :					DWG. NO.    SHEET NO. NB-TP-1022    47	
							Nong Bon WWTP Effluent and Recycle facilities	



B1 Plan



Bangkok Metropolitan Administration



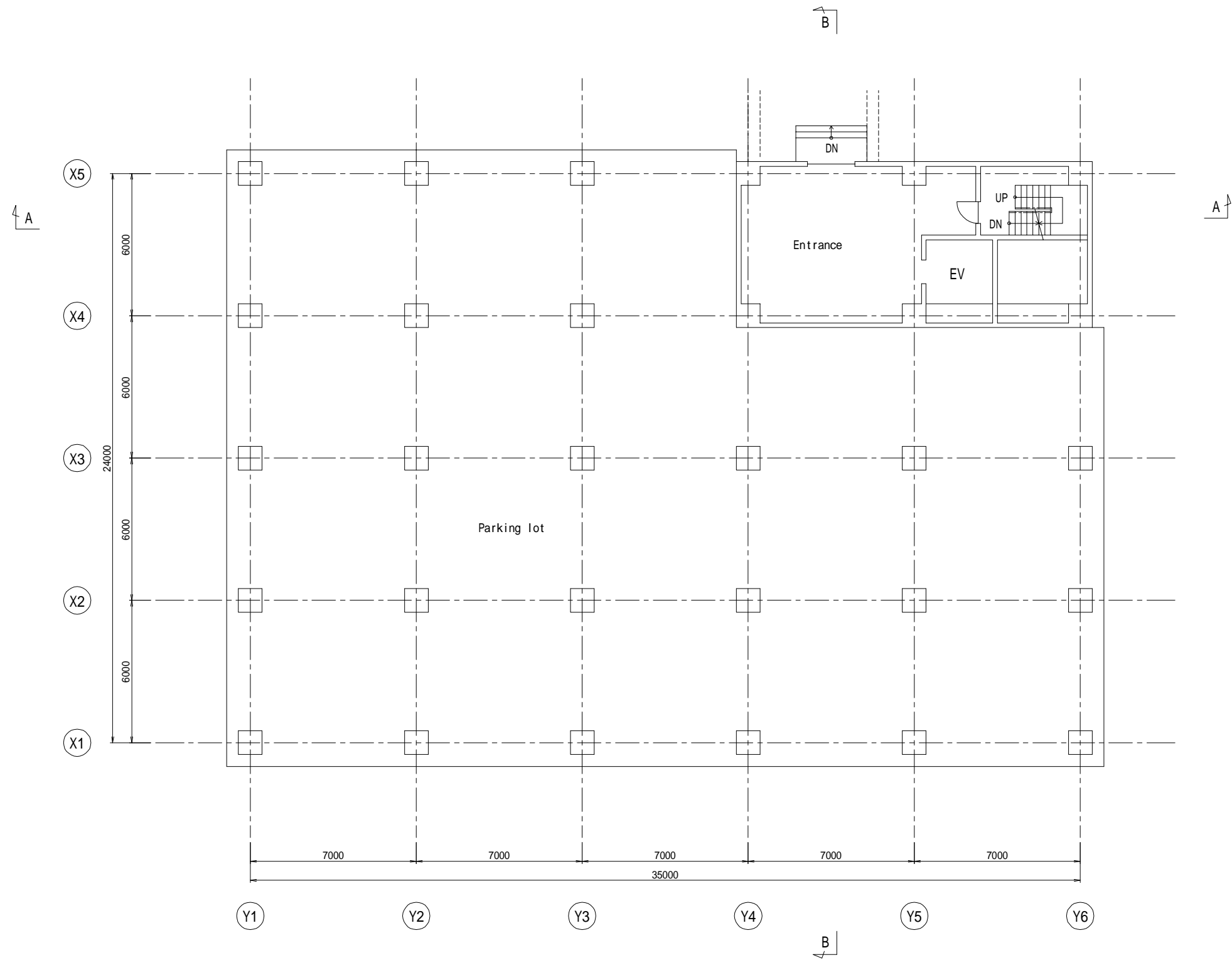
Japan International Cooperation Agency  
Tokyo Engineering Consultants Co.,Ltd  
Nippon Koei Co.,Ltd

DESIGNED :	REV.NO.	DATE	DESCRIPTION	APPROVED
DRAWN :				
CHECKED :				
PROJECT MANAGER :				
DATE :				

Department of Drainage and Sewerage	
SCALE A1 = 1:100    A3 = 1:200	
DWG. NO. NB-TP-1023	SHEET NO. 48

Preparatory Survey for Bangkok WasteWater Treatment Project

Nong Bon WWTP  
Administration building



F1 Plan



Bangkok Metropolitan Administration



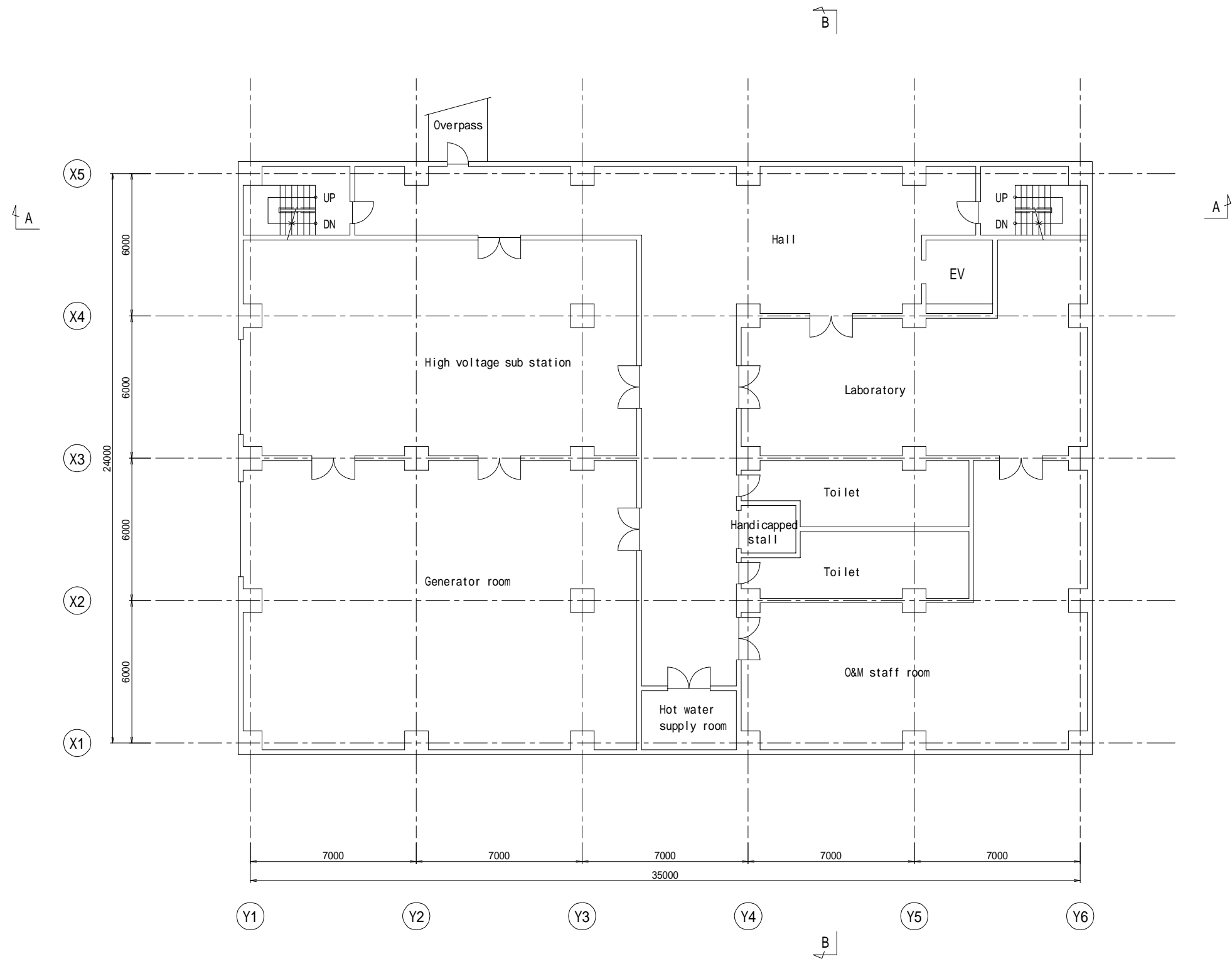
Japan International Cooperation Agency  
Tokyo Engineering Consultants Co.,Ltd  
Nippon Koei Co.,Ltd

DESIGNED :	REV.NO.	DATE	DESCRIPTION	APPROVED
DRAWN :				
CHECKED :				
PROJECT MANAGER :				
DATE :				

Department of Drainage and Sewerage	
SCALE A1 = 1:100    A3 = 1:200	
DWG. NO. NB-TP-1024	SHEET NO. 49

Preparatory Survey for Bangkok WasteWater Treatment Project

Nong Bon WWTP  
Administration building



F2 Plan



Bangkok Metropolitan Administration



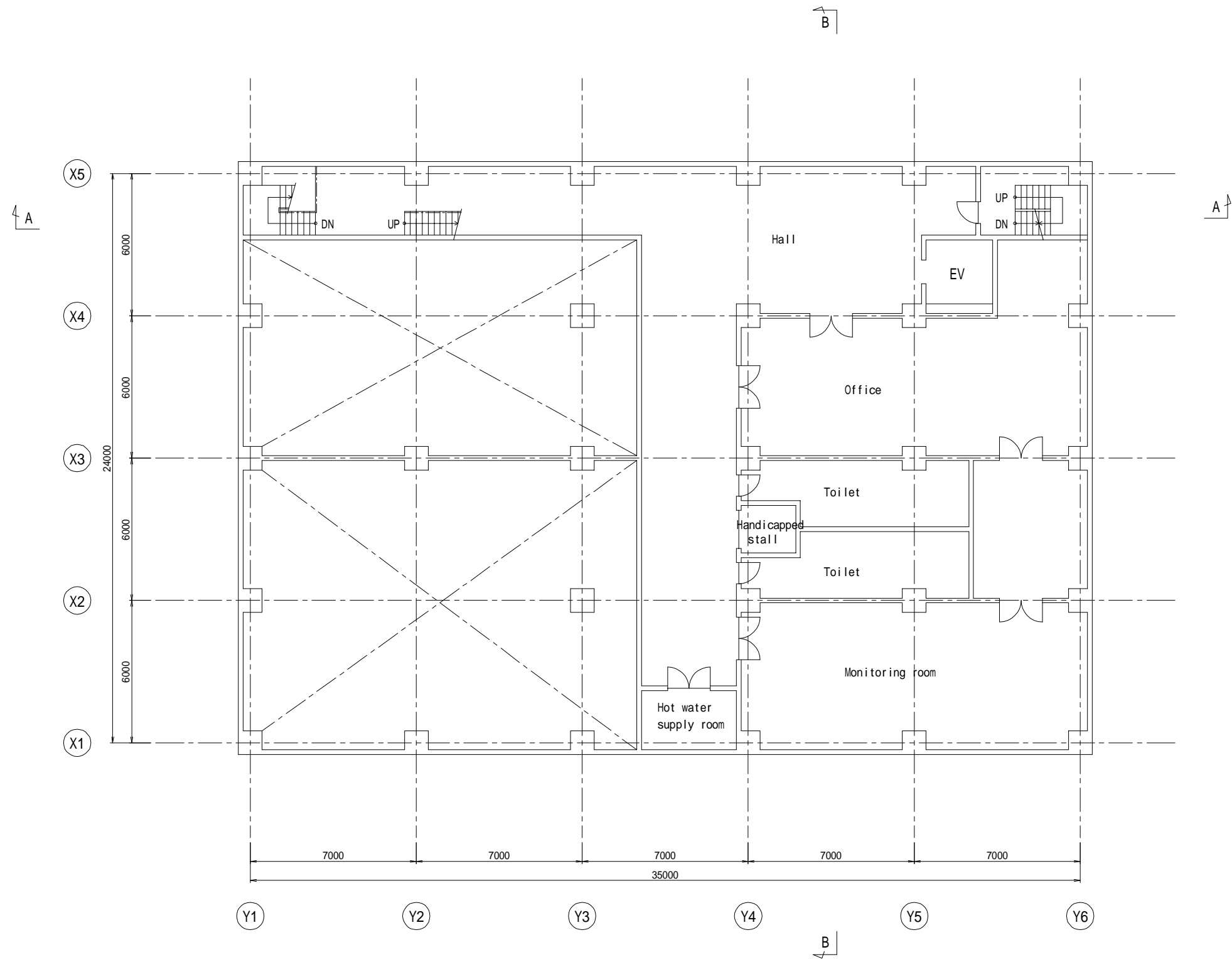
Japan International Cooperation Agency  
Tokyo Engineering Consultants Co.,Ltd  
Nippon Koei Co.,Ltd

DESIGNED :	REV.NO.	DATE	DESCRIPTION	APPROVED
DRAWN :				
CHECKED :				
PROJECT MANAGER :				
DATE :				

Department of Drainage and Sewerage	
SCALE A1 = 1:100      A3 = 1:200	
DWG. NO. NB-TP-1025	SHEET NO. 50

Preparatory Survey for Bangkok WasteWater Treatment Project

Nong Bon WWTP  
Administration building



F3 Plan



**Bangkok Metropolitan Administration**



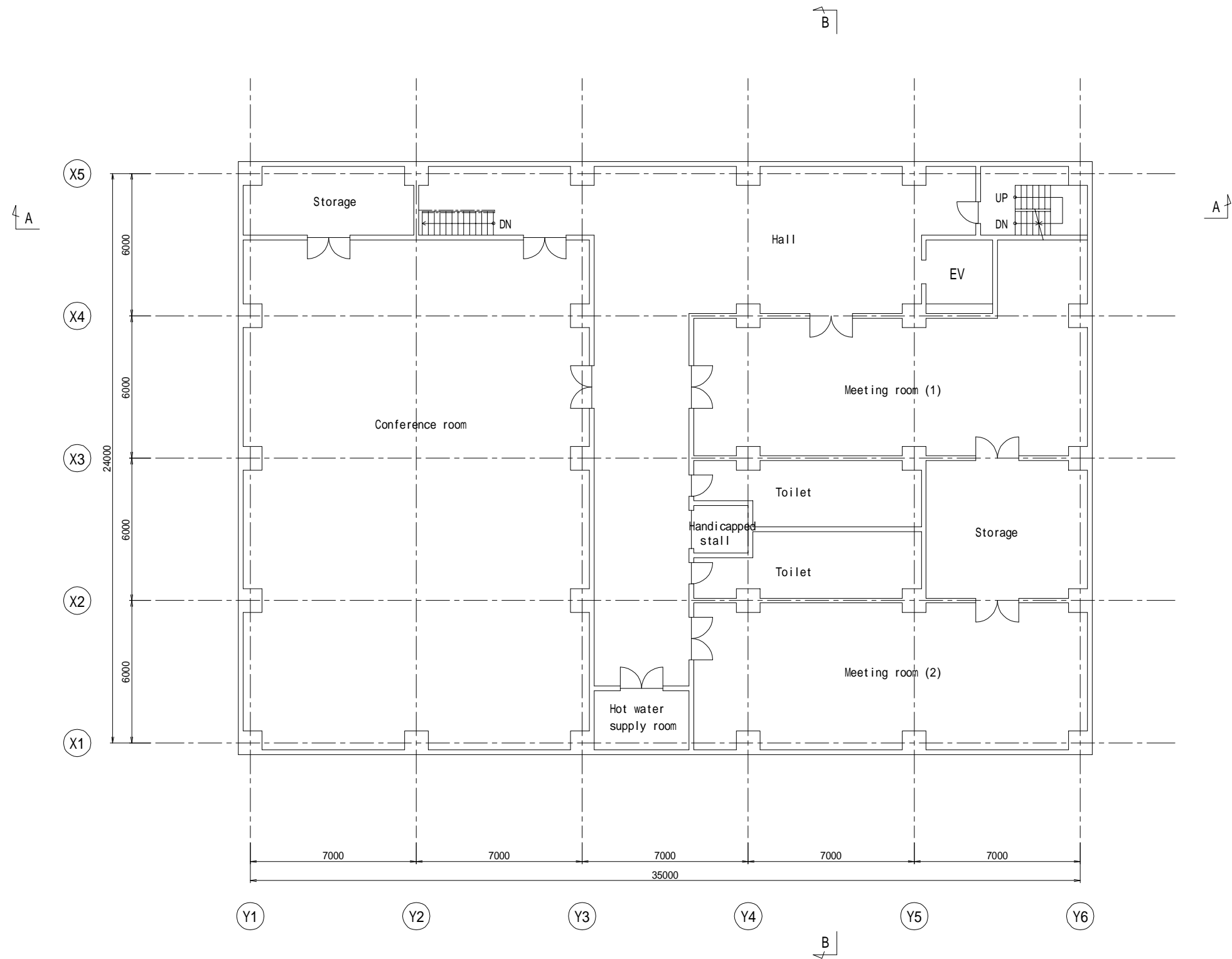
**Japan International Cooperation Agency**  
**Tokyo Engineering Consultants Co.,Ltd**  
**Nippon Koei Co.,Ltd**

DESIGNED :	REV.NO.	DATE	DESCRIPTION	APPROVED
DRAWN :				
CHECKED :				
PROJECT MANAGER :				
DATE :				

<b>Department of Drainage and Sewerage</b>	
SCALE A1 = 1:100      A3 = 1:200	
DWG. NO. NB-TP-1026	SHEET NO. 51

Preparatory Survey for Bangkok WasteWater Treatment Project

Nong Bon WWTP  
Administration building



F4 Plan



Bangkok Metropolitan Administration



Japan International Cooperation Agency  
Tokyo Engineering Consultants Co.,Ltd  
Nippon Koei Co.,Ltd

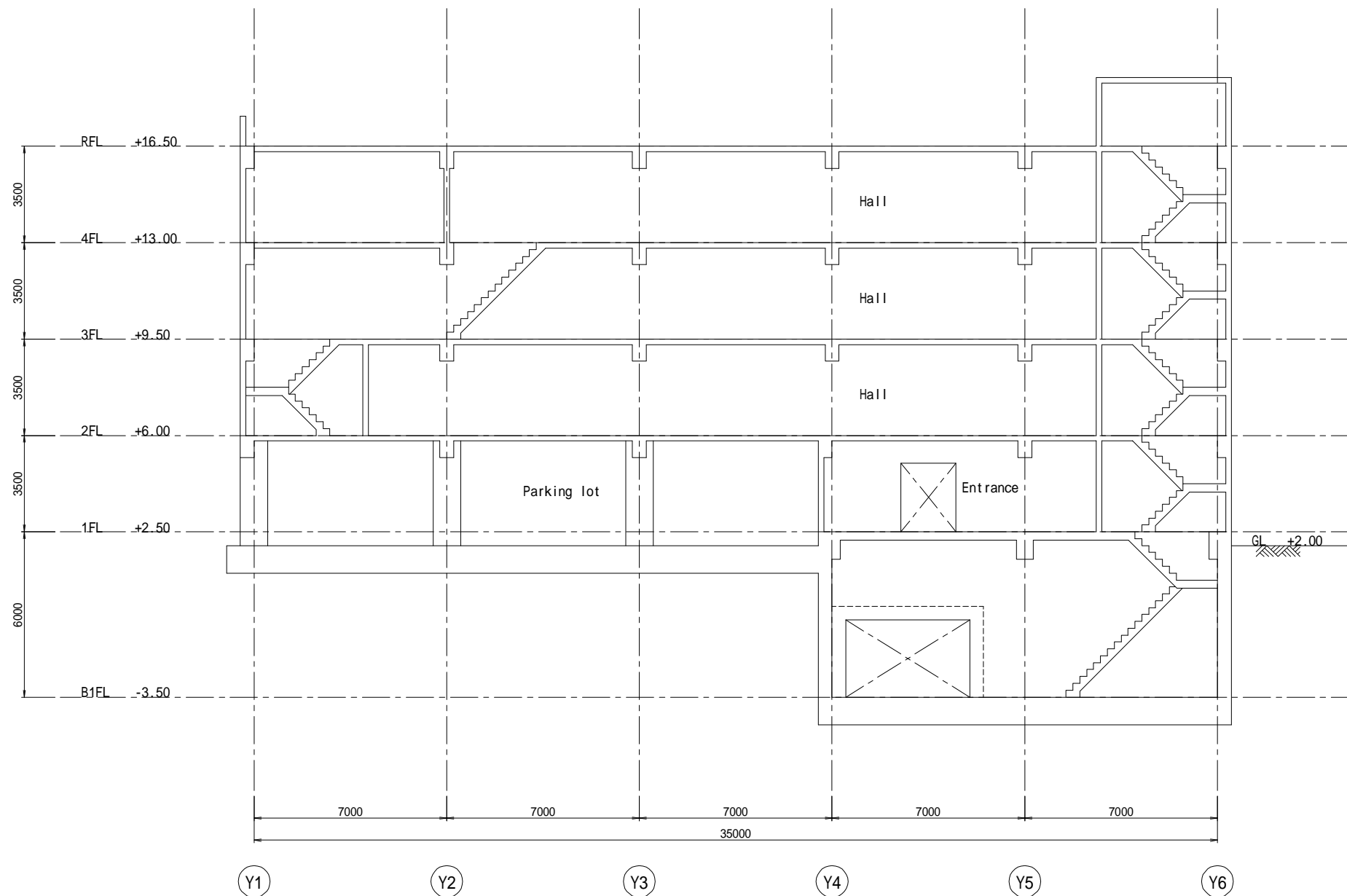
DESIGNED :	REV.NO.	DATE	DESCRIPTION	APPROVED
DRAWN :				
CHECKED :				
PROJECT MANAGER :				
DATE :				

Department of Drainage and Sewerage	
SCALE A1 = 1:100      A3 = 1:200	
DWG. NO. NB-TP-1027	SHEET NO. 52

Preparatory Survey for Bangkok WasteWater Treatment Project

Nong Bon WWTP  
Administration building





A-A Section



Bangkok Metropolitan Administration



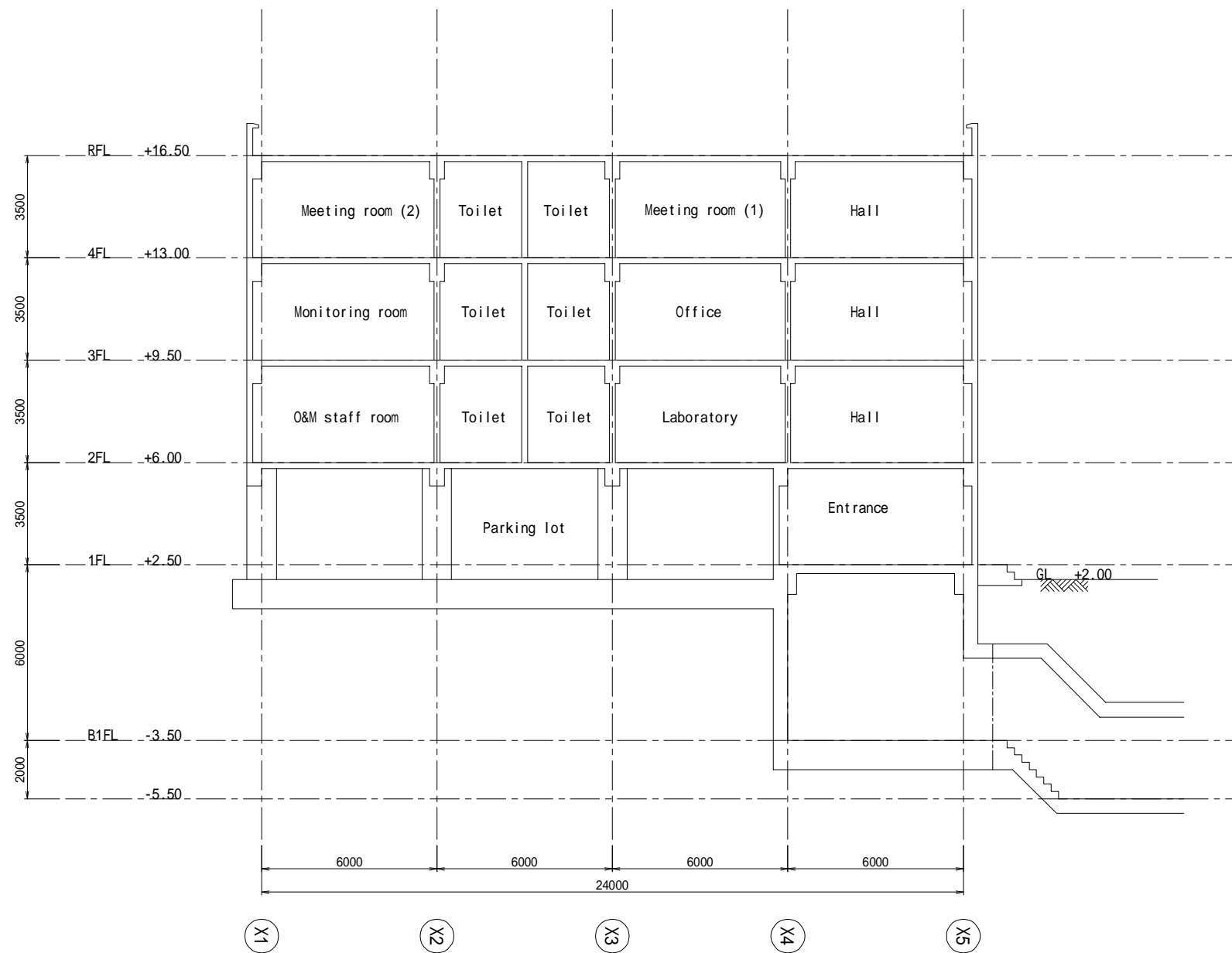
Japan International Cooperation Agency  
Tokyo Engineering Consultants Co.,Ltd  
Nippon Koei Co.,Ltd

DESIGNED :	REV.NO.	DATE	DESCRIPTION	APPROVED
DRAWN :				
CHECKED :				
PROJECT MANAGER :				
DATE :				

Department of Drainage and Sewerage	
SCALE A1 = 1:100    A3 = 1:200	
DWG. NO. NB-TP-1028	SHEET NO. 53

Preparatory Survey for Bangkok WasteWater Treatment Project

Nong Bon WWTP  
Administration building



B-B Section



Bangkok Metropolitan Administration



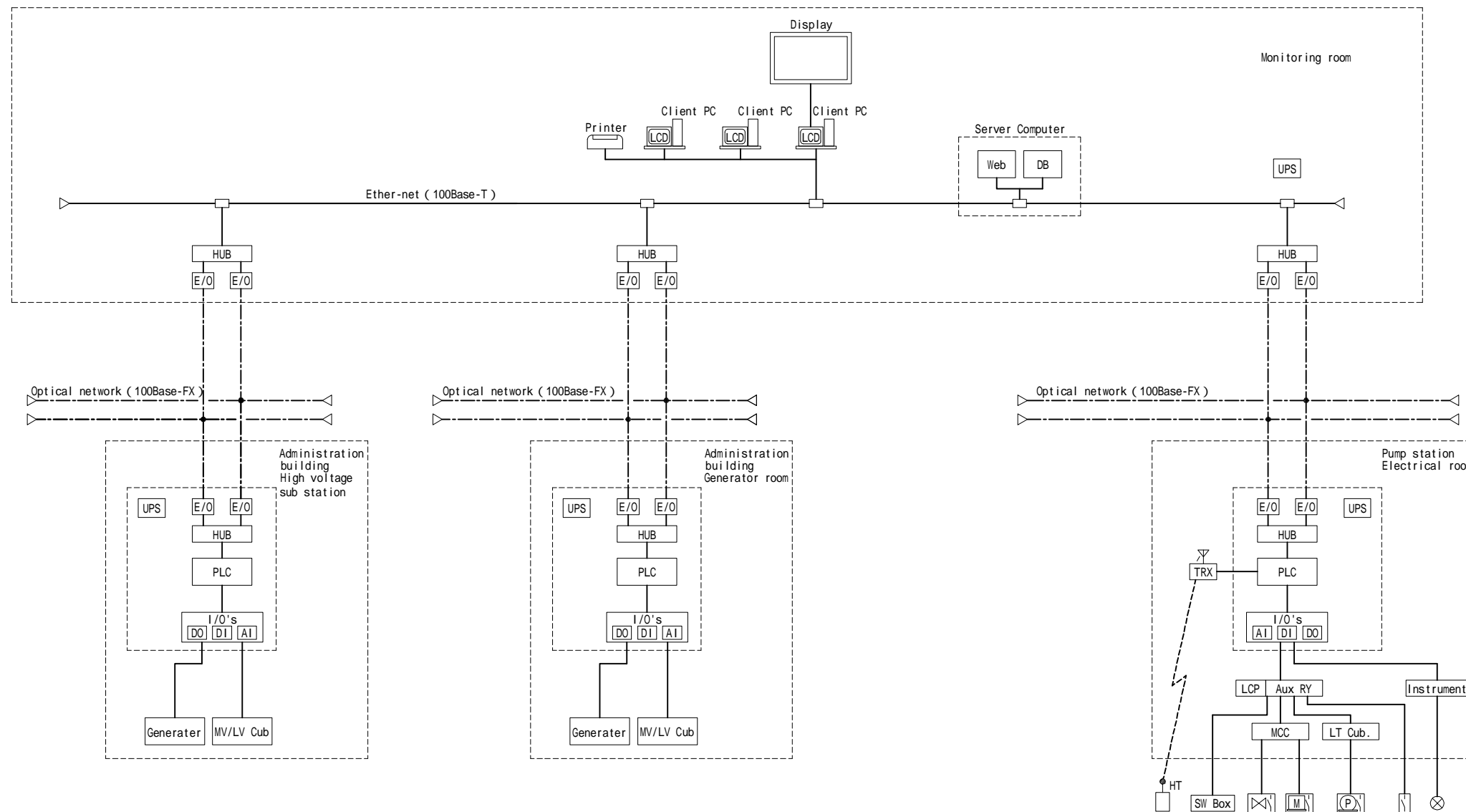
Japan International Cooperation Agency  
Tokyo Engineering Consultants Co.,Ltd  
Nippon Koei Co.,Ltd

DESIGNED :	REV.NO.	DATE	DESCRIPTION	APPROVED
DRAWN :				
CHECKED :				
PROJECT MANAGER :				
DATE :				

Department of Drainage and Sewerage	
SCALE A1 = 1:100    A3 = 1:200	
DWG. NO. NB-TP-1029	SHEET NO. 54

Preparatory Survey for Bangkok WasteWater Treatment Project

Nong Bon WWTP  
Administration building



Legend

SCADA System	
DB	Data Base Server
Web	Web Server
HUB	Network Hub Unit
RTU	Remoto Terminal Unit
PLC	Programable Logic Controler
I/O's	Input Output Units
R I/O's	Remote Input Output Units
AI	Analog Input Unit (DC4-20mA,1-5V,etc.)
DI	Digital input Unit (On/Off,etc.)
AO	Analog Output Unit
DO	Digital Output Unit
E/O	Electrical-to-Optical Converter
TRX	Tranciever for Wireless Cummunication
VPN	Virtuar Private Network (Dedicated Communication Network)

Control System	
Aux RY	Auxiliary Relay Cubicle
MCC	Motor Control Center
MV/LV Cub	Middle Voltage/Low Voltage Cubicle
Instrument	Instrument Cubicle
SW Box	Control Switch Box
HT	Handheld Terminal

- Gate and screen facilities
- Grit chamber facilities
- Lift pump facilities
- Sewage treatment facilities
- Blower facilities
- Deodorization facilities
- Chlorination and recycle facilities
- Discharge pump facilities
- Sludge treatment facilities



Bangkok Metropolitan Administration



Japan International Cooperation Agency  
Tokyo Engineering Consultants Co.,Ltd  
Nippon Koei Co.,Ltd

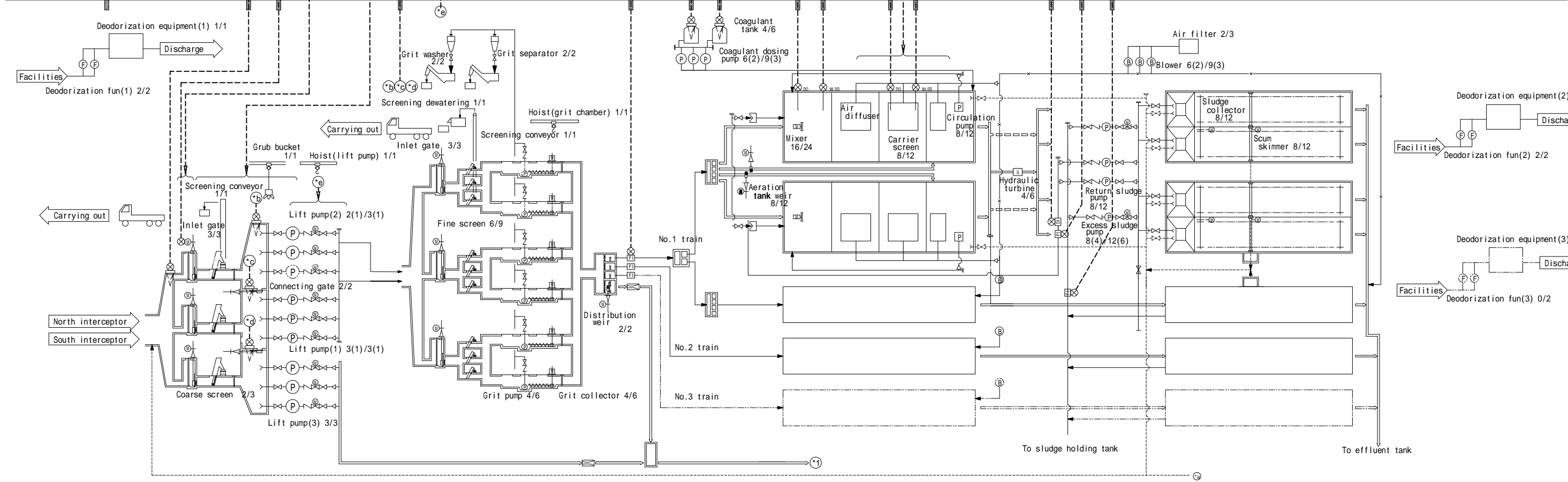
DESIGNED :	REV.NO.	DATE	DESCRIPTION	APPROVED
DRAWN :				
CHECKED :				
PROJECT MANAGER :				
DATE :				

Department of Drainage and Sewerage	
SCALE: A1 = Non      A3 = Non	
DWG. NO. NB-TP-1030	SHEET NO. 55

Preparatory Survey for Bangkok WasteWater Treatment Project

Nong Bon WWTW  
Electrical integrated control system

Measuring		Inlet well level	Inlet gate open position	Pump well level	Influent flow	Coagulant tank level	No.1 Aeration tank DO	No.1 Aeration tank MLSS	No.3 Aeration tank DO	No.3 Aeration tank MLSS	Return sludge flow	Return sludge flow	Excess sludge flow
Num. of Sensor	Phase I	1	3	3	2	2	8	8	8	8	4	4	1
	Phase II	1	3	3	3	0	4	4	4	4	6	6	1
	Total	1	3	3	3	2	12	12	12	12	6	6	1

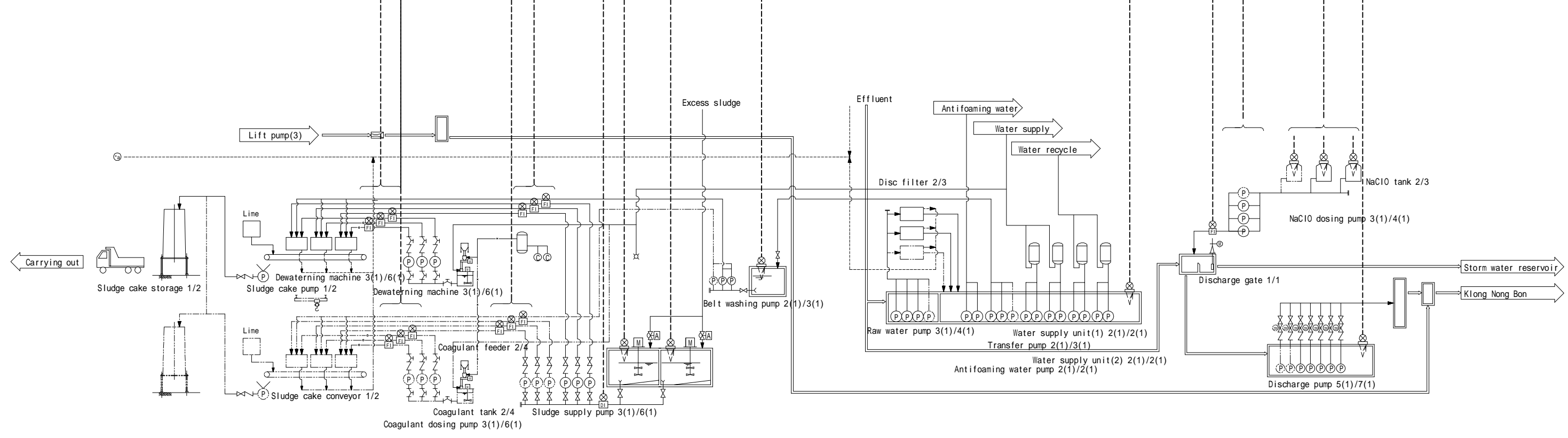


<p><b>Bangkok Metropolitan Administration</b></p>	<p><b>Japan International Cooperation Agency</b> Tokyo Engineering Consultants Co.,Ltd Nippon Koei Co.,Ltd</p>	DESIGNED :	REV.NO.	DATE	DESCRIPTION	APPROVED	<b>Department of Drainage and Sewerage</b>	Preparatory Survey for Bangkok WasteWater Treatment Project	
		DRAWN :							SCALE: A1 = Non      A3 = Non
		CHECKED :							
		PROJECT MANAGER :							
DATE :							DWG. NO. NB-TP-1031	SHEET NO. 56	

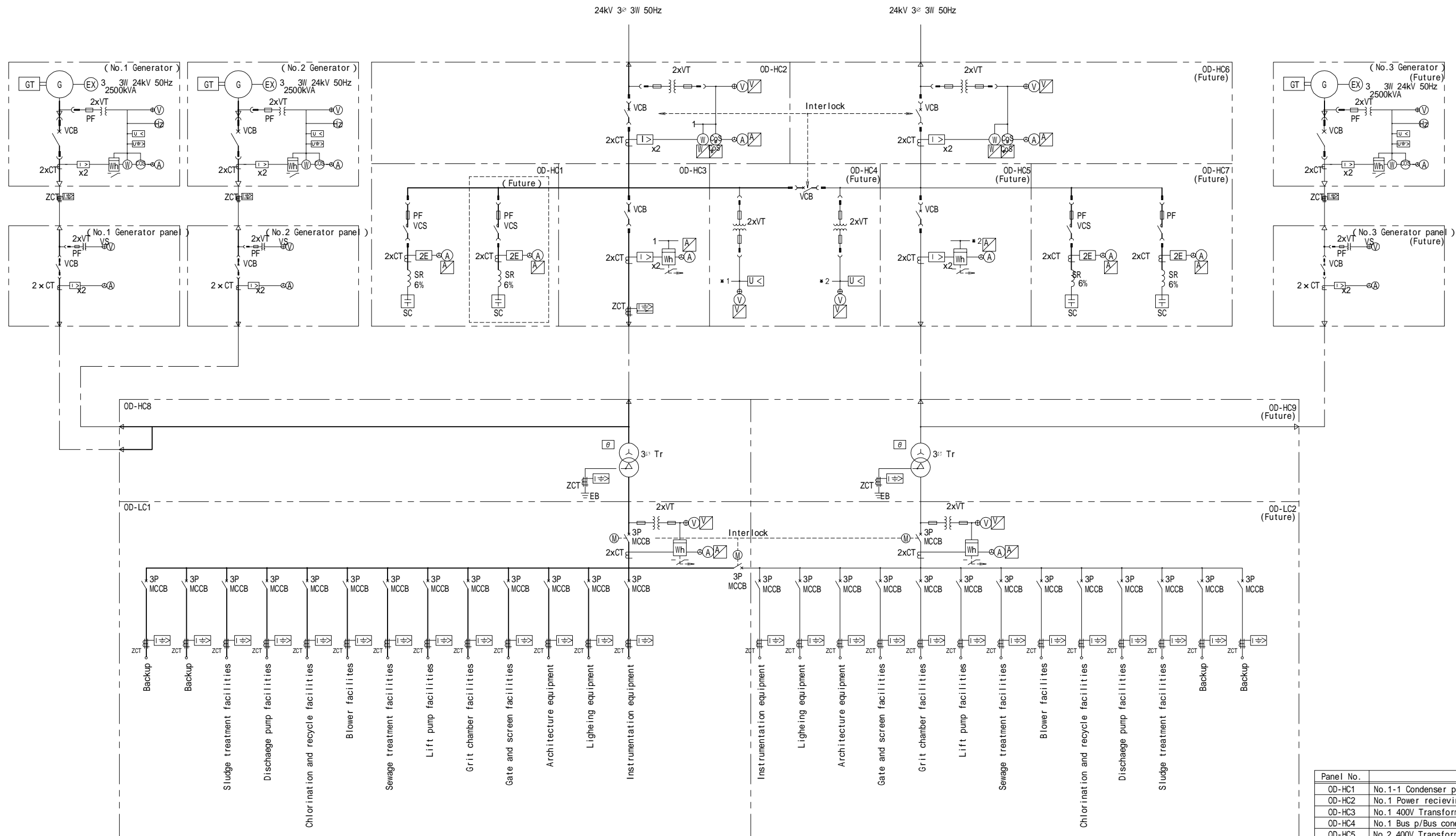
Measuring		NO.4~6 Coagulant flow	NO.1~3 Coagulant flow	NO.4~6 Sludge flow	NO.1~3 Sludge flow	Sludge concentration	Sludge holding tank level	Sludge holding tank level	Water tank level	Effluent tank level	NaClO dosing flow	NaClO storage tank level	Effluent flow
Num. of Sensor	Phase I	0	3	0	3	1	1	1	1	1	1	2	1
	Phase II	0	3	0	3	0	0	0	0	0	1	1	0
	Total	3	3	3	3	1	1	1	1	1	2	3	1

SCADA	PLC Automatic control	Instrumentation
I Value indication and Trend graph R Reporting (daily, monthly, annual) Q Integration A Alarm		



 <b>Bangkok Metropolitan Administration</b>	 <b>Japan International Cooperation Agency</b> <b>Tokyo Engineering Consultants Co.,Ltd</b> <b>Nippon Koei Co.,Ltd</b>	DESIGNED :	REV.NO.	DATE	DESCRIPTION	APPROVED	Department of Drainage and Sewerage	Preparatory Survey for Bangkok WasteWater Treatment Project	
		DRAWN :						SCALE:	A1 = Non      A3 = Non
		CHECKED :						DWG. NO.	SHEET NO.
		PROJECT MANAGER :						NB-TP-1032	57
DATE :								Nong Bon WWTP Instrumentation diagram	



Panel No.	Item	Remark
OD-HC1	No.1-1 Condenser p/No.1-2 Condenser p	
OD-HC2	No.1 Power receiving panel	
OD-HC3	No.1 400V Transformer primary panel	
OD-HC4	No.1 Bus p/Bus connection p/No.2 Bus p	Future
OD-HC5	No.2 400V Transformer primary panel	Future
OD-HC6	No.2 Power receiving panel	Future
OD-HC7	No.2-1 Condenser p/No.2-2 Condenser p	Future
OD-HC8	No.1 400V Transformer panel	
OD-HC9	No.2 400V Transformer panel	Future
OD-LC1	No.1 400V Transformer secondary panel	
OD-LC2	No.2 400V Transformer secondary panel	Future



**Bangkok Metropolitan Administration**



**Japan International Cooperation Agency**  
**Tokyo Engineering Consultants Co.,Ltd**  
**Nippon Koei Co.,Ltd**

DESIGNED :	REV.NO.	DATE	DESCRIPTION	APPROVED
DRAWN :				
CHECKED :				
PROJECT MANAGER :				
DATE :				

<b>Department of Drainage and Sewerage</b>	
SCALE: A1 = NON A3 = NON	
DWG. NO.	SHEET NO.
NB-TP-1033	58

Preparatory Survey for Bangkok Waste Water Treatment Project

Nong Bon WWTP  
 Single line diagram