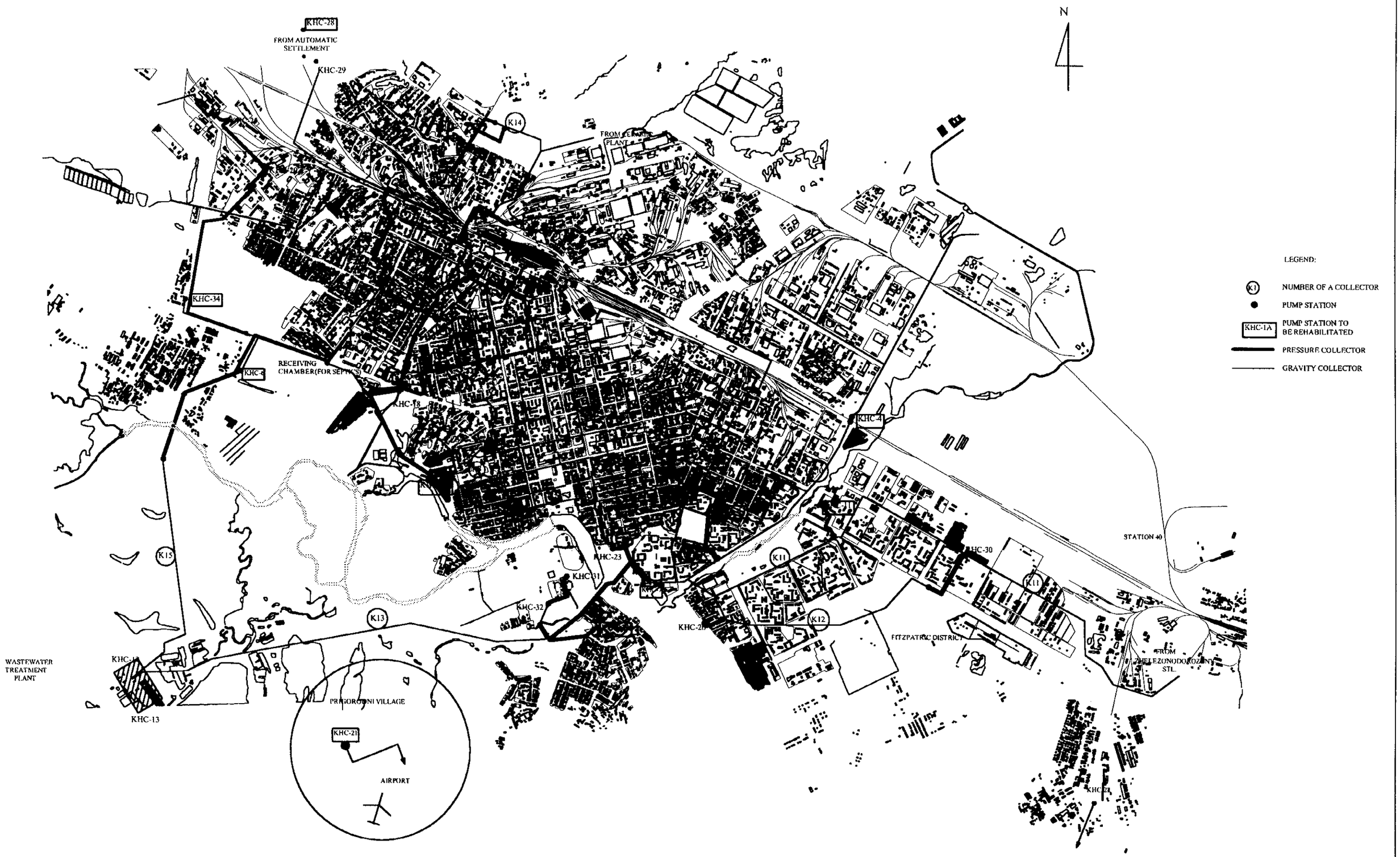
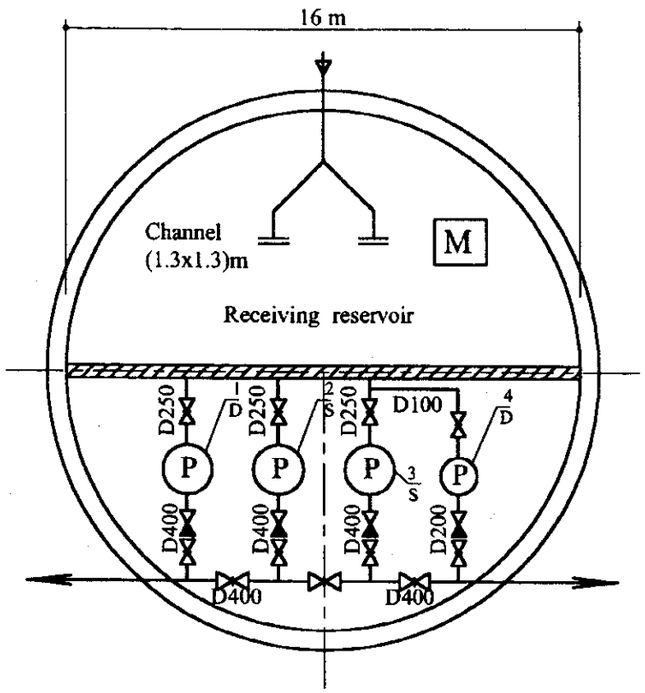


PROJECT	The Feasibility Study on Water Supply and Sewerage in the City of Astana
DRAWING TITLE	WASTEWATER COLLECTION SYSTEM LOCATION OF PUMP STATIONS TO BE REHABILITATED

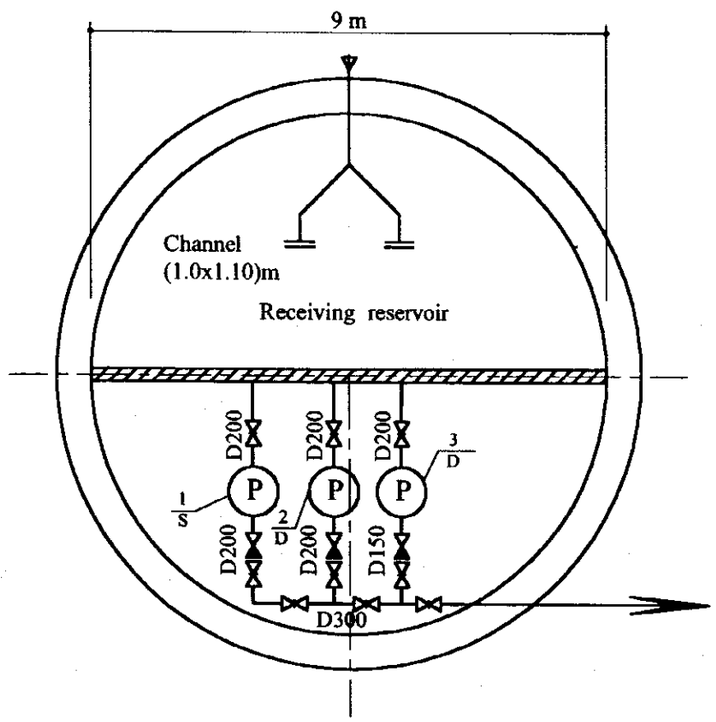
DATE	SCALE	SHEET NO.
JANUARY 2001	as noted	B−11

KHC-1A



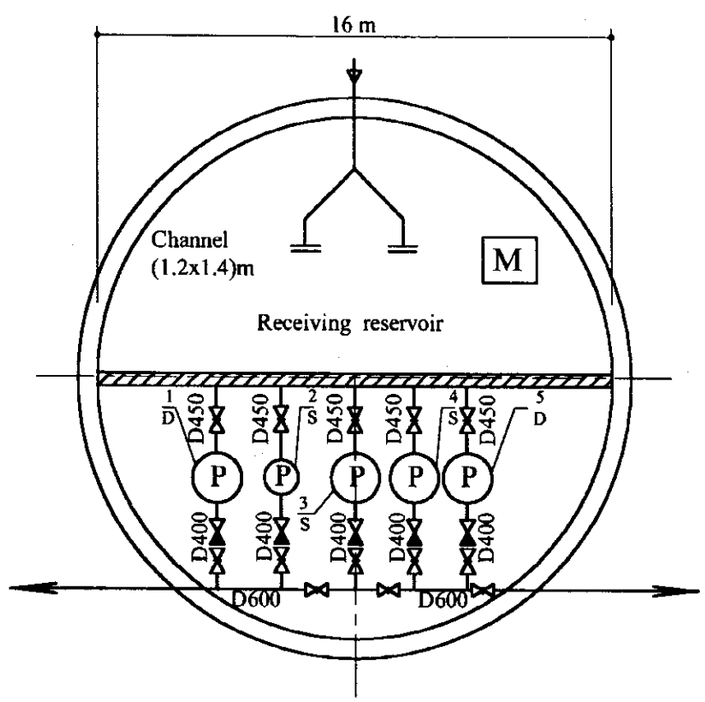
N°	Q (m^3/h)	H (m)
1	800	22.5
2	800	22.5
3	800	22.5
4	450	22.5

KHC-2



N°	Q (m^3/h)	H (m)
1	450	22
2	450	22
3	368	16

KHC-10



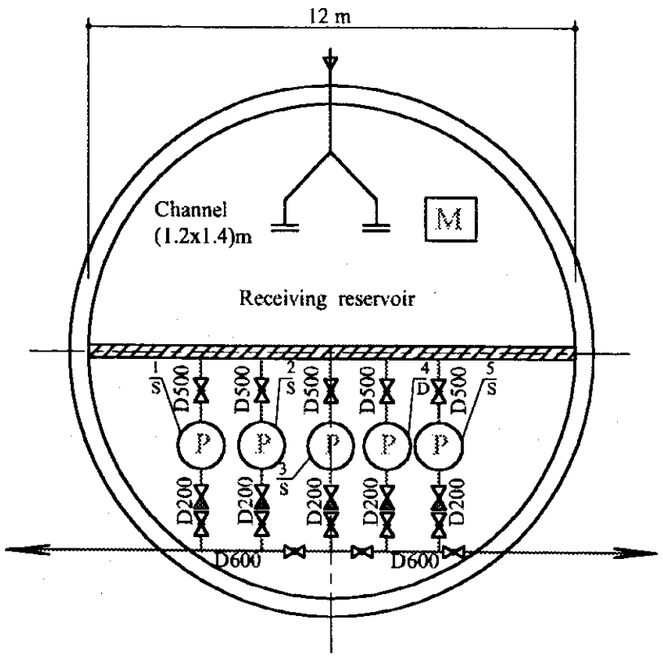
N°	Q (m^3/h)	H (m)
1	450	22
2	800	22
3	450	22
4	450	22
5	450	22

Note: 4/D: duty, 2/S: standby

Legend
= screens
M macerator (not working)

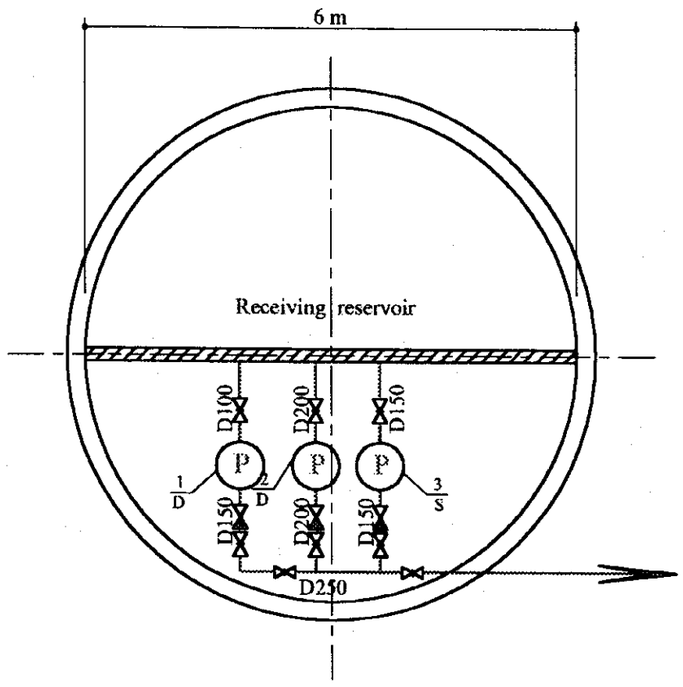
PROJECT	The Feasibility Study on Water Supply and Sewerage in the City of Astana
DRAWING TITLE	WASTEWATER COLLECTION SYSTEM SCHEMATIC ARRANGEMENT OF PUMP STATIONS TO BE REHABILITATED (1/6)
DATE: MARCH 2001	SCALE: not to scale
SHEET NO.	B−12

KHC-4



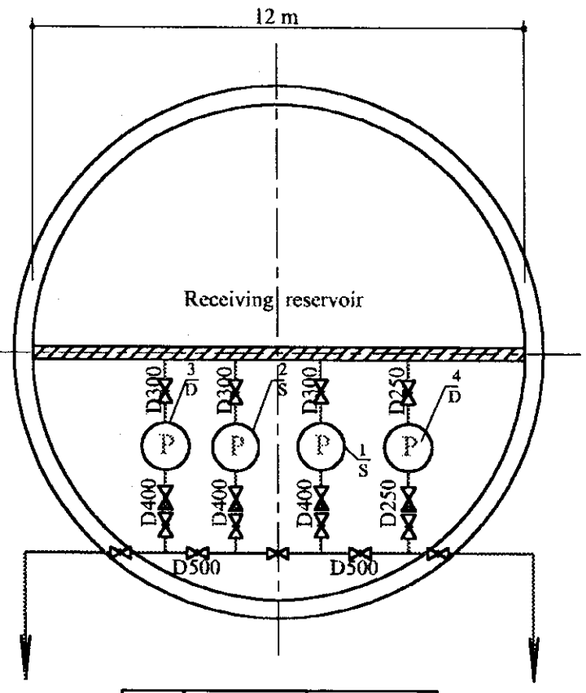
Nº	Q (m^3/h)	H (m)
1	450	22
2	450	22
3	450	22
4	450	22
5	800	22

KHC-9



Nº	Q (m^3/h)	H (m)
1	114	22
2	360	22
3	144	22

KHC-6



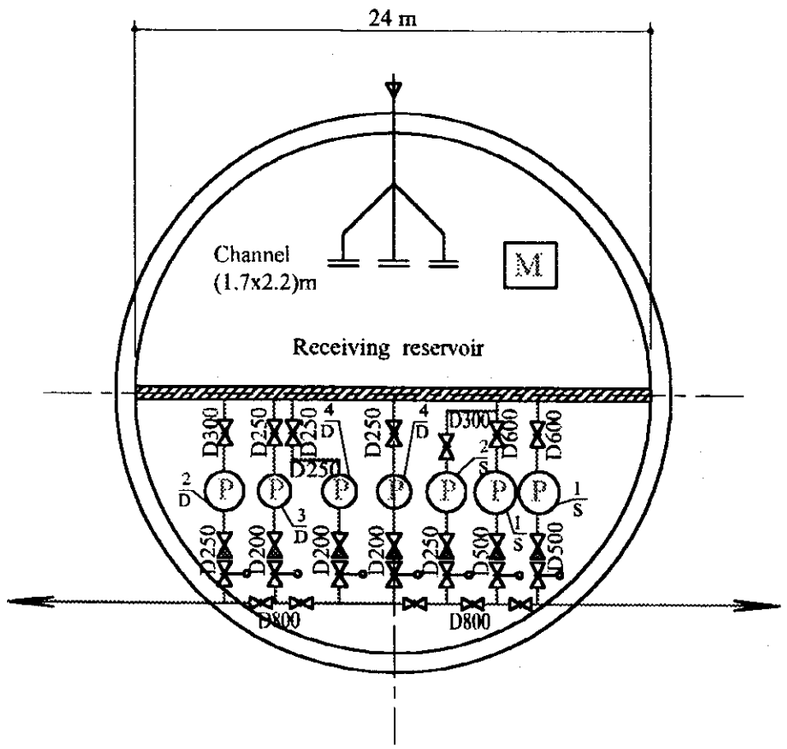
Nº	Q (m^3/h)	H (m)
1	1600	22.5
2	1600	22.5
3	1600	22.5
4	800	22.5

Note: 4/D: duty
2/S: standby

Legend
= screens
M macerator (not working)

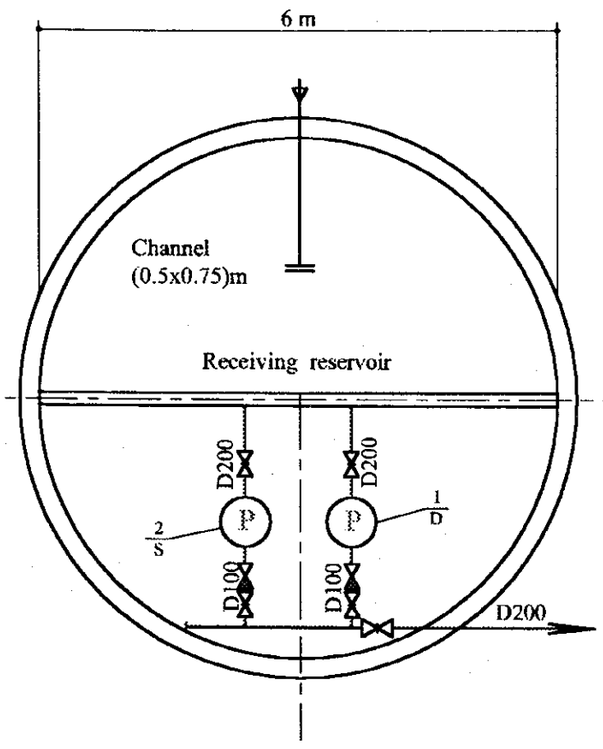
PROJECT	The Feasibility Study on Water Supply and Sewerage in the City of Astana	
DRAWING TITLE	WASTEWATER COLLECTION SYSTEM SCHEMATIC ARRANGEMENT OF PUMP STATIONS TO BE REHABILITATED (2/6)	
DATE	SCALE	SHEET NO.
MARCH 2001	not to scale	B−13

KHC-7



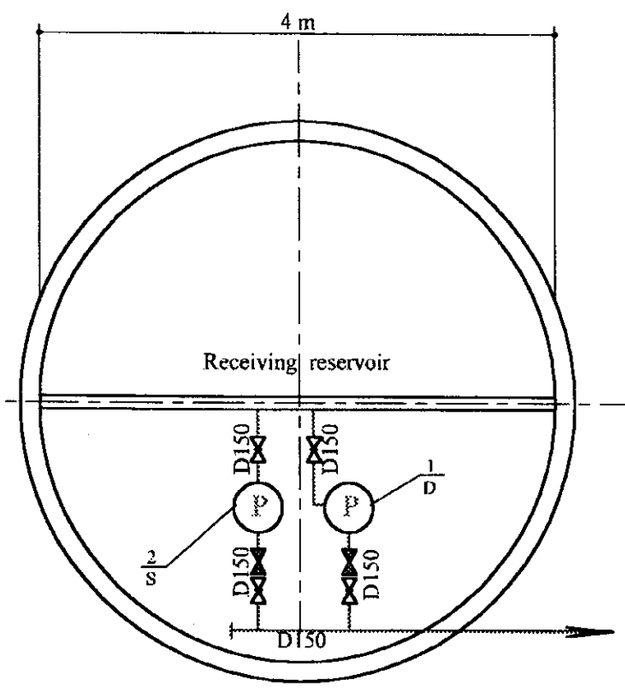
N°	Q (m^3/h)	H (m)
1	3500	19.5
2	1600	25
3	800	22
4	450	22

KHC-11



N°	Q (m^3/h)	H (m)
1	144	22
2	114	22

KHC-14



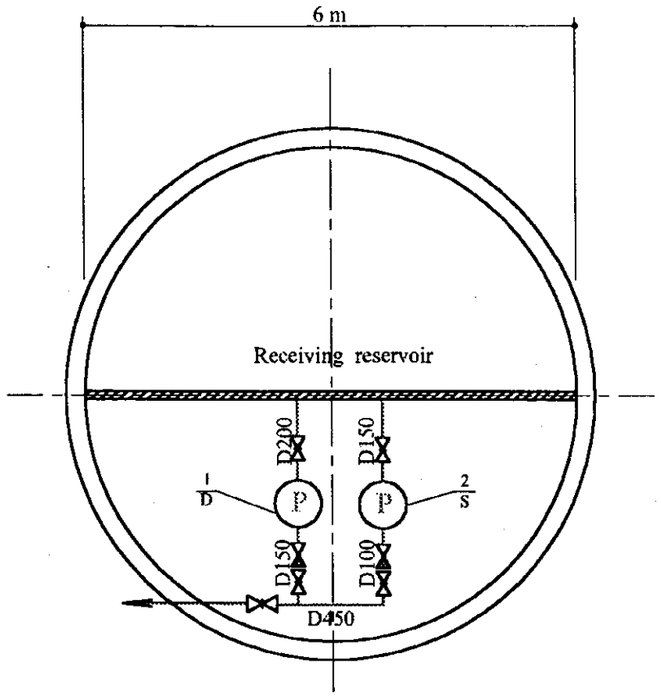
N°	Q (m^3/h)	H (m)
1	250	22
2	144	22

Note: $\frac{4}{D}$: duty
$\frac{2}{S}$: standby

Legend
= screens
M macerator (not working)

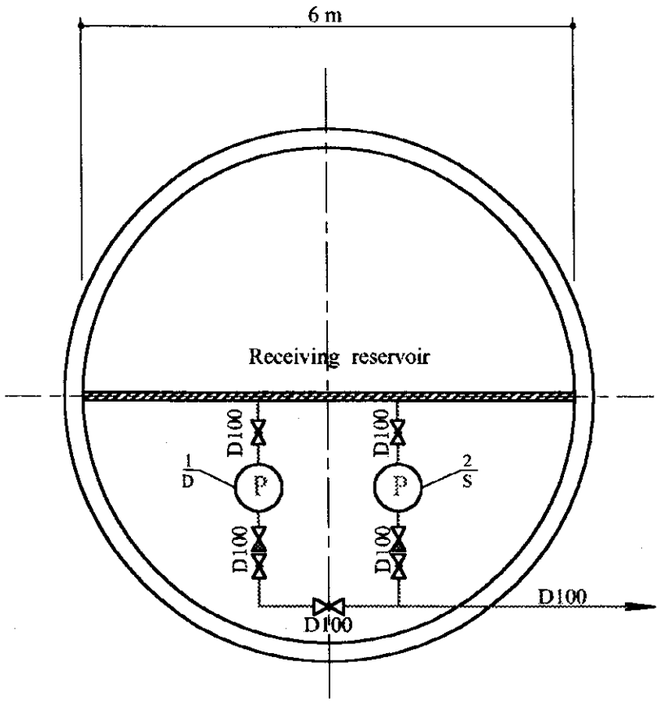
PROJECT	The Feasibility Study on Water Supply and Sewerage in the City of Astana
DRAWING TITLE	WASTEWATER COLLECTION SYSTEM SCHEMATIC ARRANGEMENT OF PUMP STATIONS TO BE REHABILITATED (3/8)
DATE	MARCH 2001
SCALE	not to scale
SHEET NO.	B−14

KHC-15



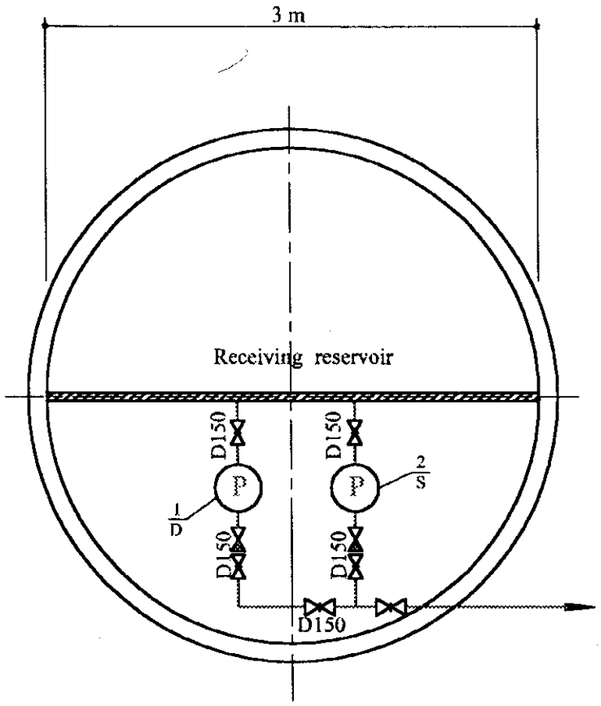
N°	Q (m^3/h)	H (m)
1	250	22
2	144	22

KHC-16



N°	Q (m^3/h)	H (m)
1	114	22
2	114	22

KHC-17

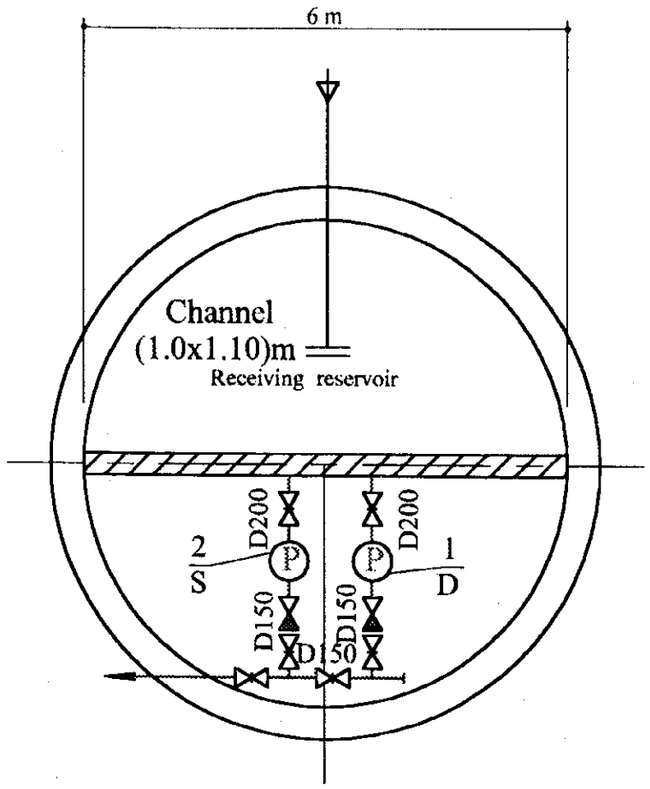


N°	Q (m^3/h)	H (m)
1	114	11
2	114	11

Note: 4/D: duty
2/S: standby

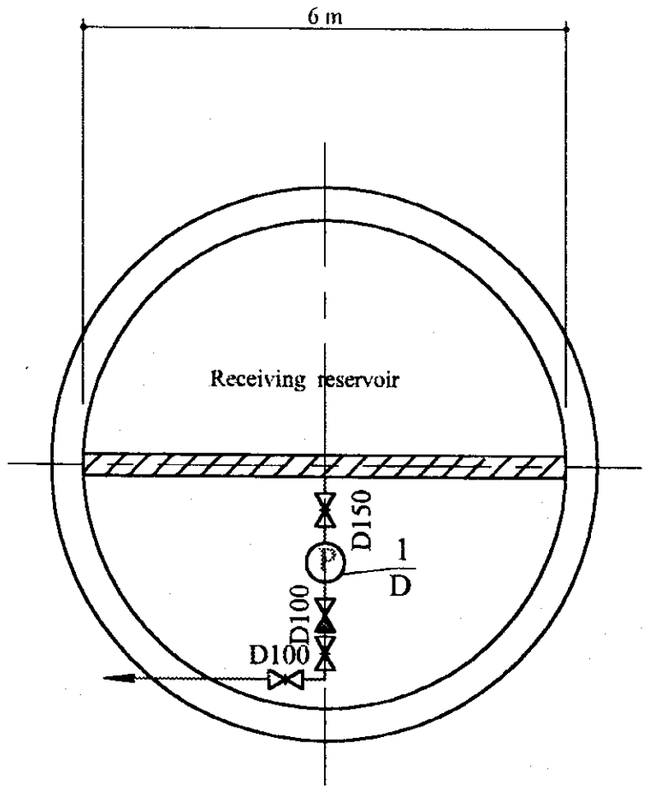
PROJECT	The Feasibility Study on Water Supply and Sewerage in the City of Astana
DRAWING TITLE	WASTEWATER COLLECTION SYSTEM SCHEMATIC ARRANGEMENT OF PUMP STATIONS TO BE REHABILITATED (4/8)
DATE: MARCH 2001	SCALE: not to scale
	SHEET NO.: B−15

KHC-21



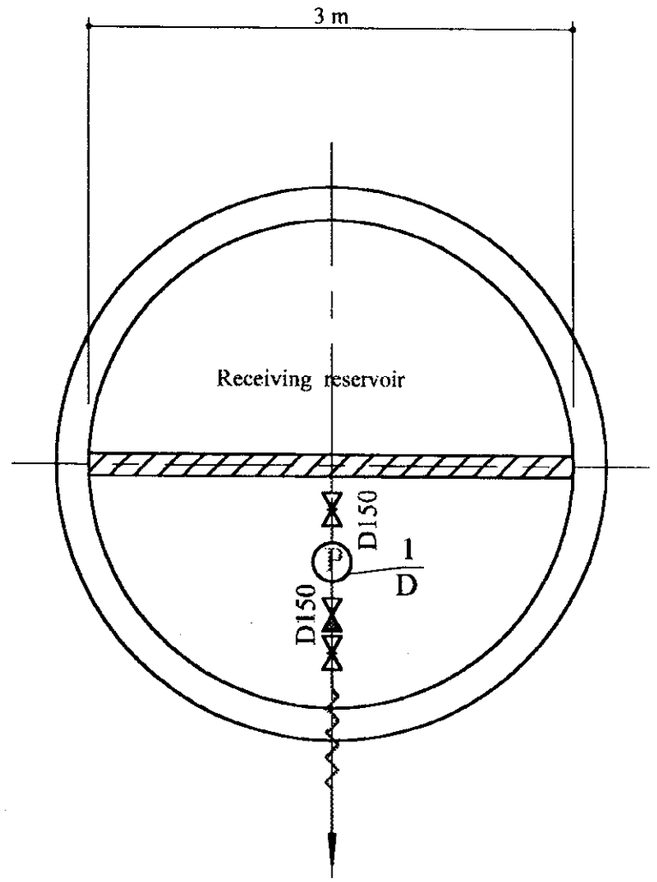
N°	Q (m^3/h)	H (m)
1	250	22
2	250	22

KHC-24



N°	Q (m^3/h)	H (m)
1	80	20

KHC-28



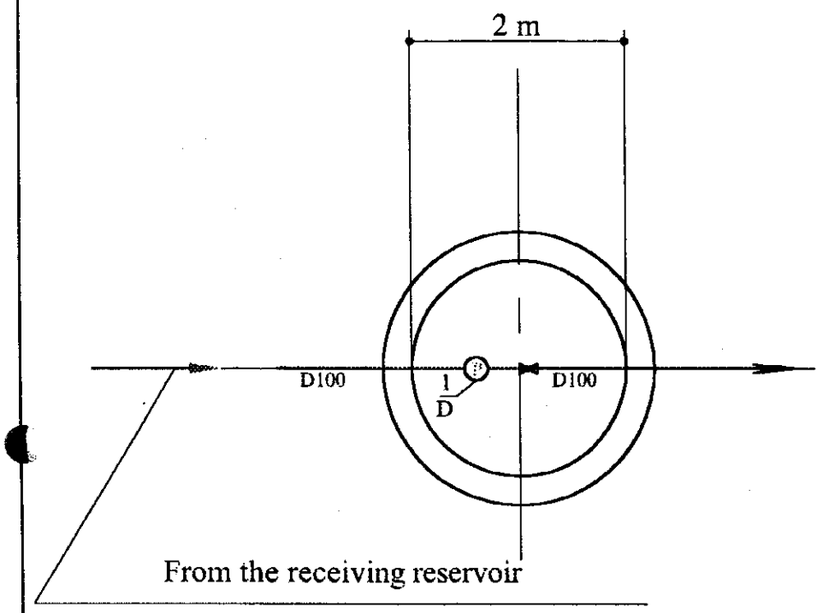
N°	Q (m^3/h)	H (m)
1	50	N.A.

Note: $\frac{4}{D}$: duty
$\frac{2}{S}$: standby

Legend
= screens

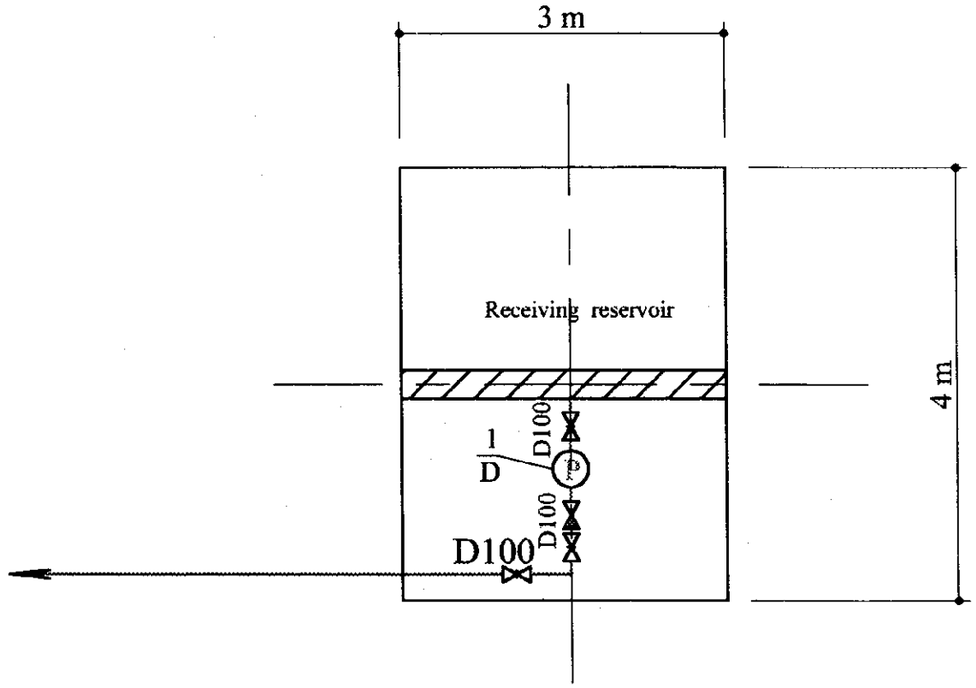
PROJECT	The Feasibility Study on Water Supply and Sewerage in the City of Astana
DRAWING TITLE	WASTEWATER COLLECTION SYSTEM SCHEMATIC ARRANGEMENT OF PUMP STATIONS TO BE REHABILITATED (5/6)
DATE	MARCH 2001
SCALE	not to scale
SHEET NO.	B−16

KHC-33



N°	Q (m^3/h)	H (m)
1	50	11.5

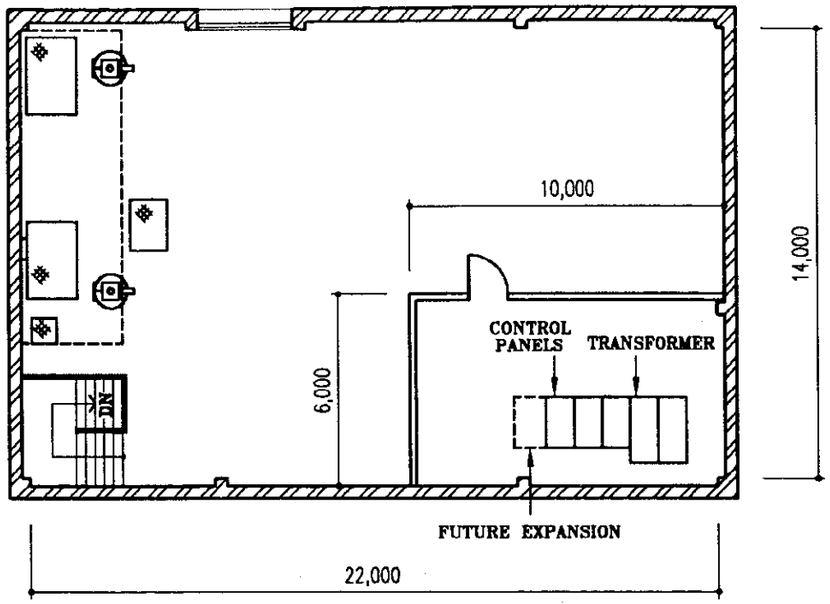
KHC-34



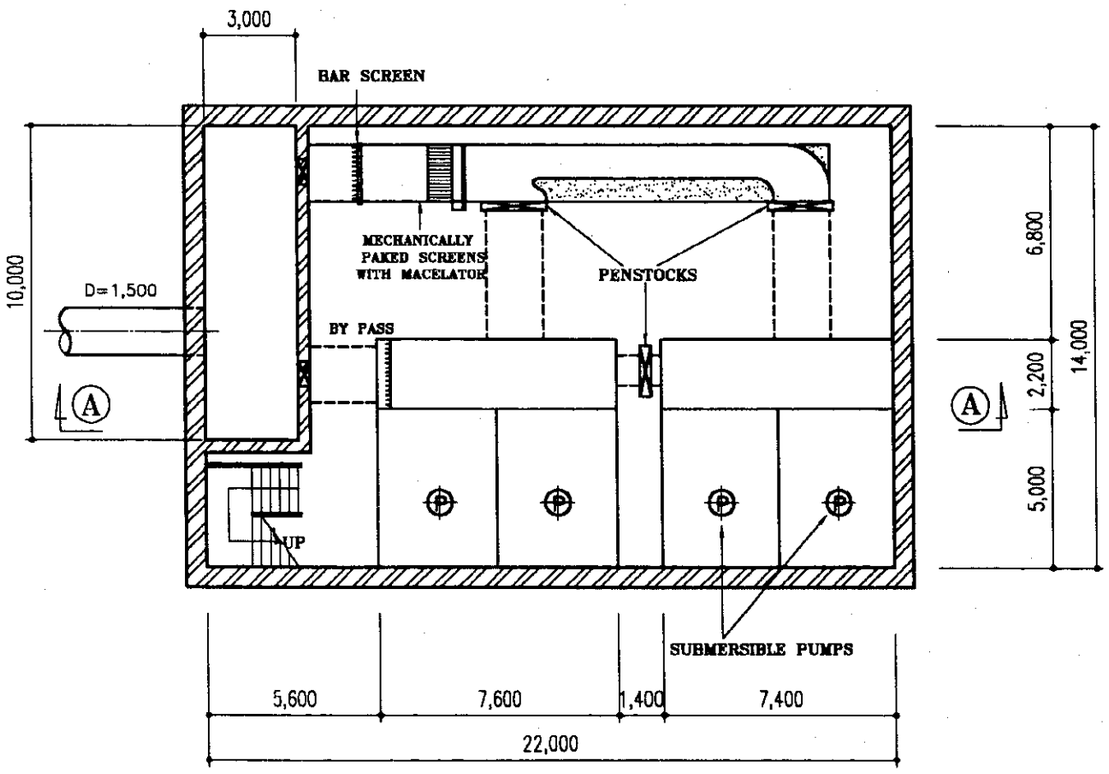
N°	Q (m^3/h)	H (m)
1	50	11.5

Note: $\overset{4}{/D}$: duty
$\overset{2}{/S}$: standby

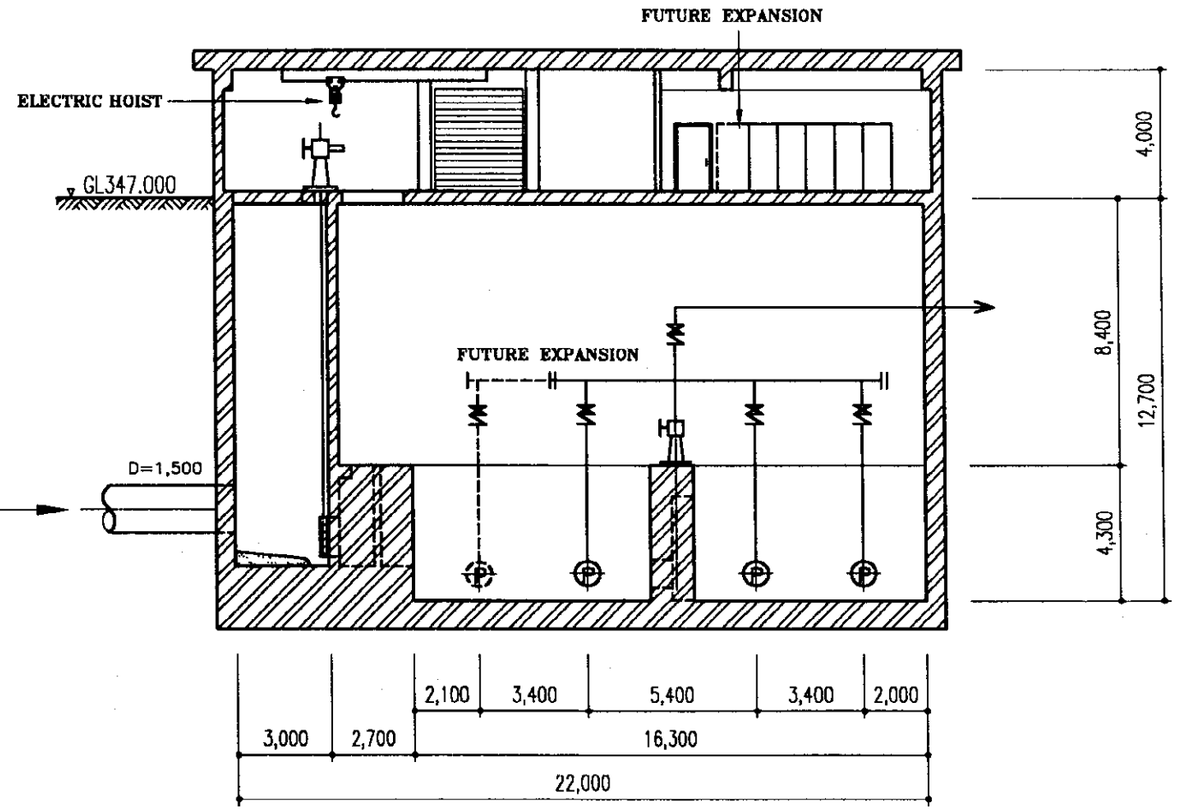
PROJECT	The Feasibility Study on Water Supply and Sewerage in the City of Astana
DRAWING TITLE	WASTEWATER COLLECTION SYSTEM SCHEMATIC ARRANGEMENT OF PUMP STATIONS TO BE REHABILITATED (6/6)
DATE: MARCH 2001	SCALE: not to scale
SHEET NO.	B−17



PLAN (GROUND FLOOR) S=1/200



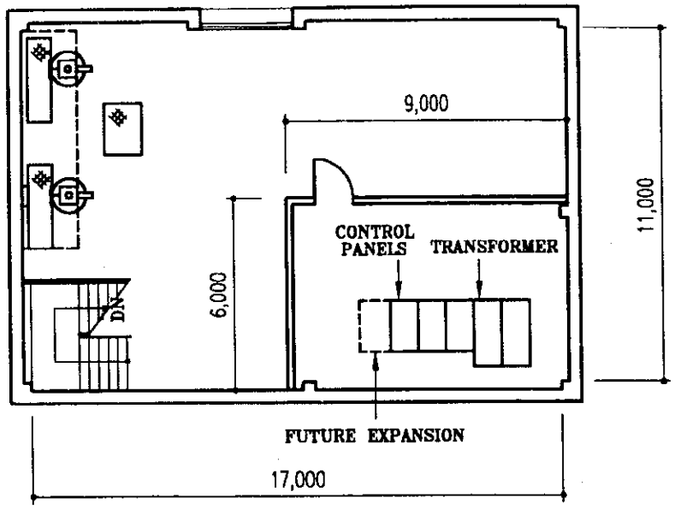
PLAN (BASEMENT PUMP FLOOR) S=1/200



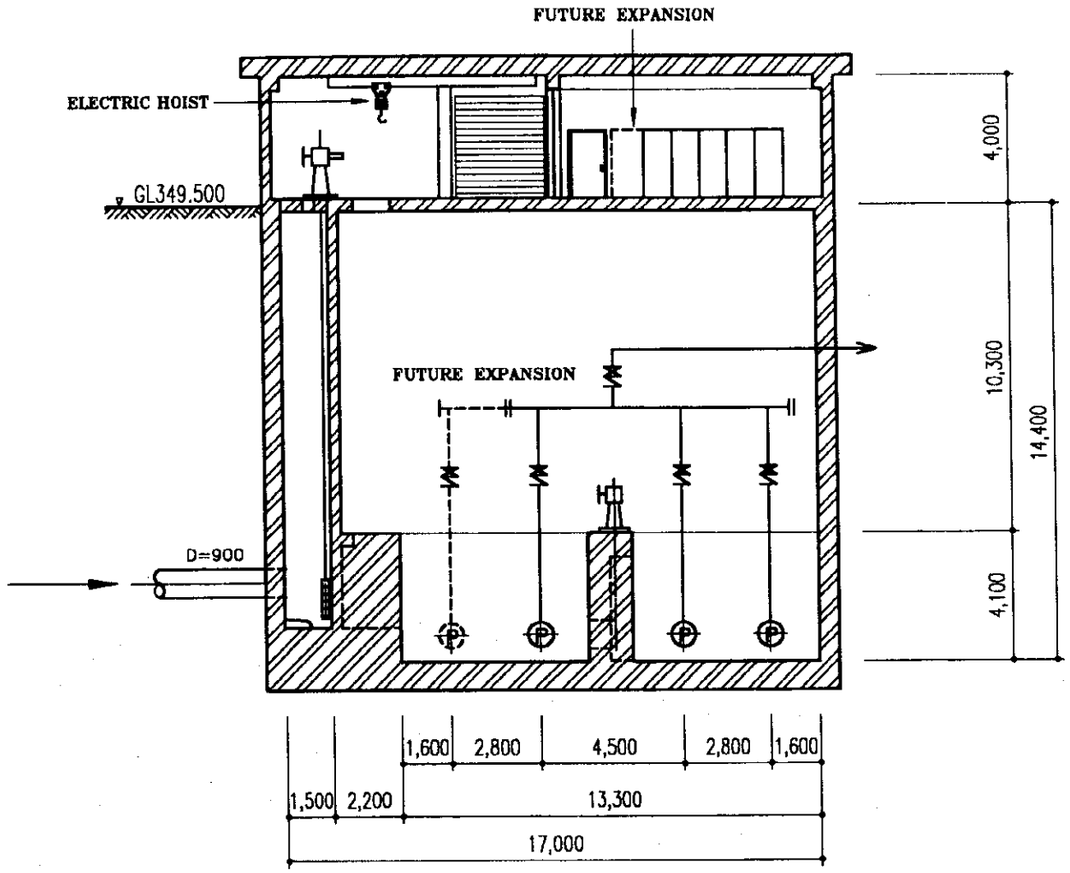
Ⓐ – Ⓐ SECTION S=1/200

PROJECT	The Feasibility Study on Water Supply and Sewerage in the City of Astana
DRAWING TITLE	WASTEWATER COLLECTION SYSTEM PROPOSED WASTEWATER PUMP STATION KHC-50

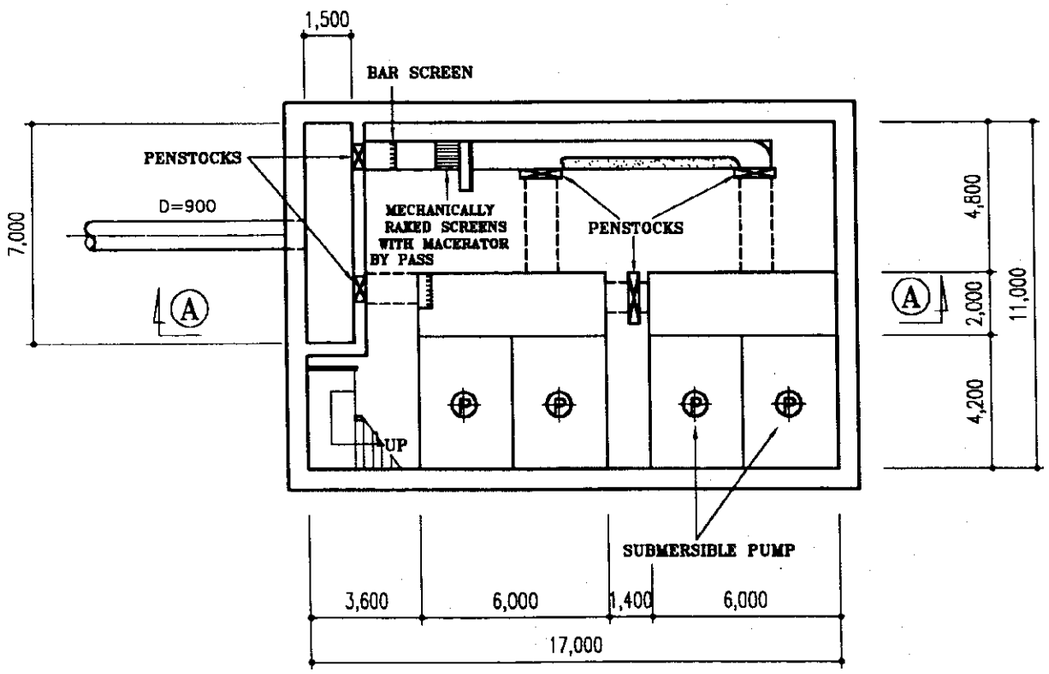
DATE	SCALE	SHEET NO.
MARCH 2001	1/200	B-18



PLAN (GROUND FLOOR) S=1/200



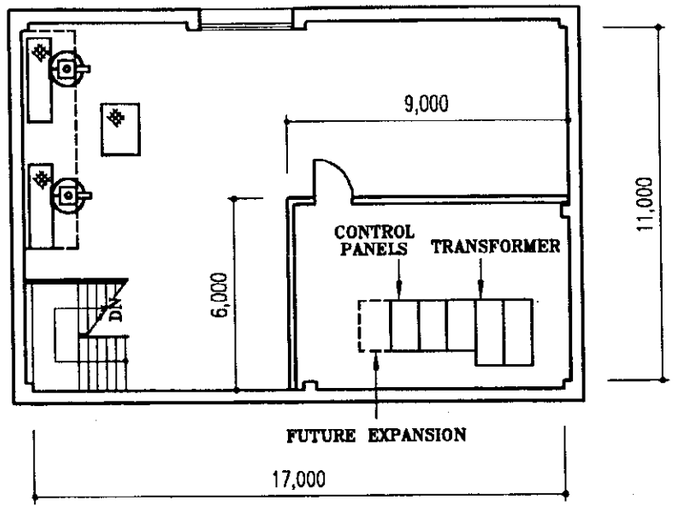
Ⓐ – Ⓐ SECTION S=1/200



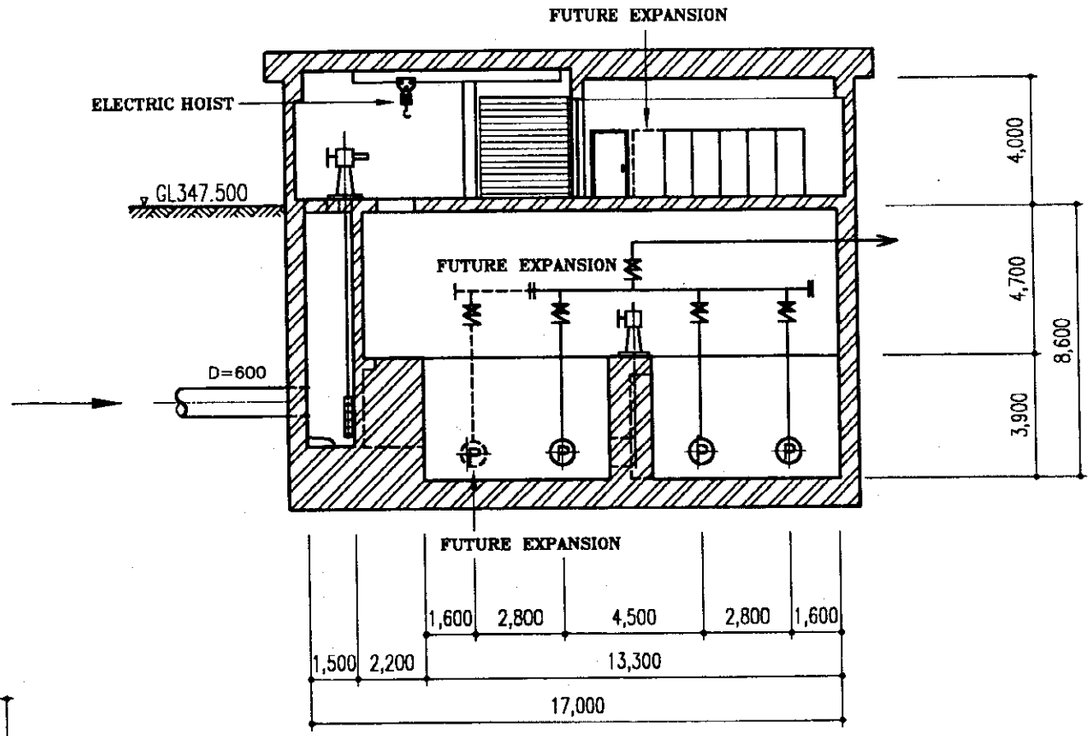
PLAN (BASEMENT PUMP FLOOR) S=1/200

PROJECT	The Feasibility Study on Water Supply and Sewerage in the City of Astana
DRAWING TITLE	WASTEWATER COLLECTION SYSTEM PROPOSED WASTEWATER PUMP STATION KHC-51

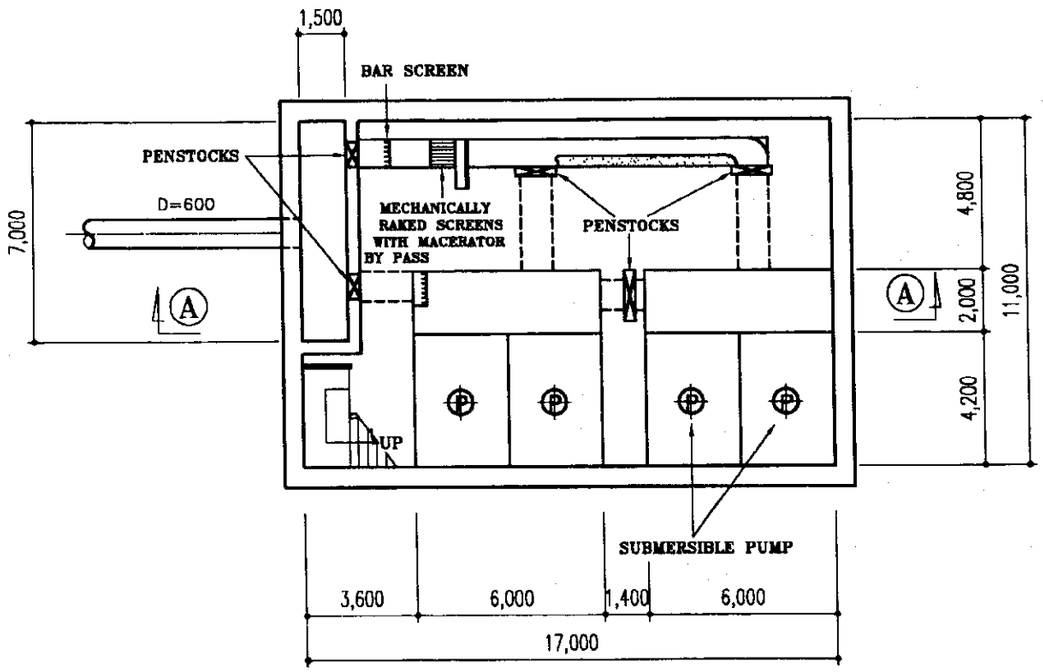
DATE	SCALE	SHEET NO.
MARCH 2001	1/200	B-19



PLAN (GROUND FLOOR) S=1/200



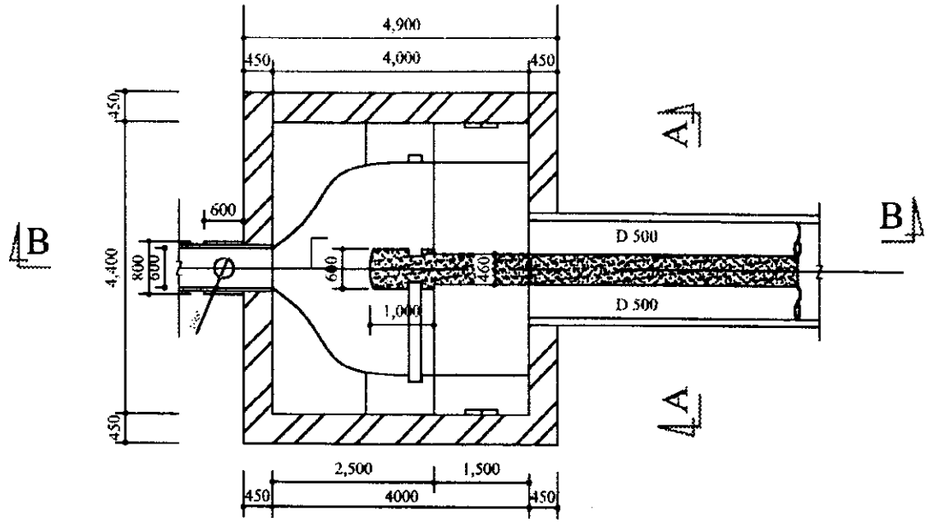
Ⓐ - Ⓐ SECTION S=1/200



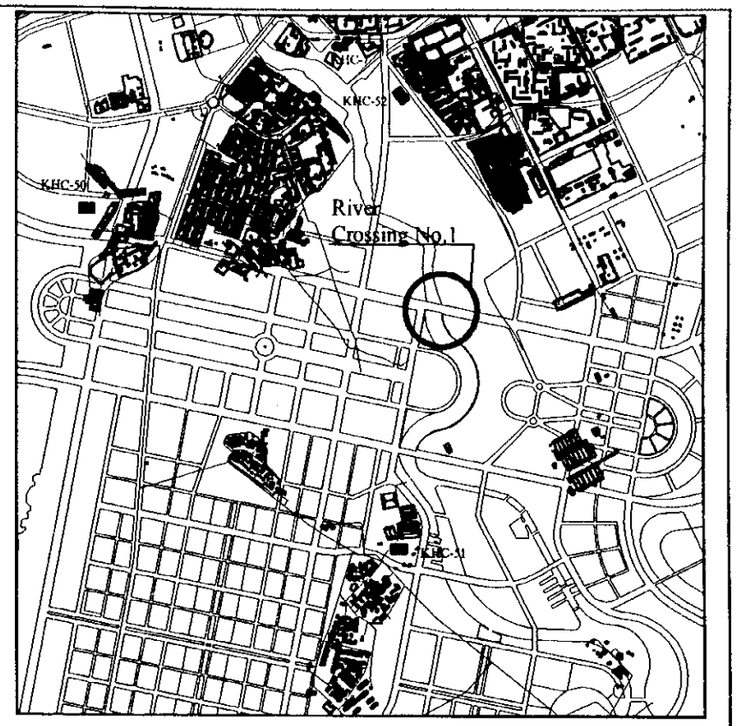
PLAN (BASEMENT PUMP FLOOR) S=1/200

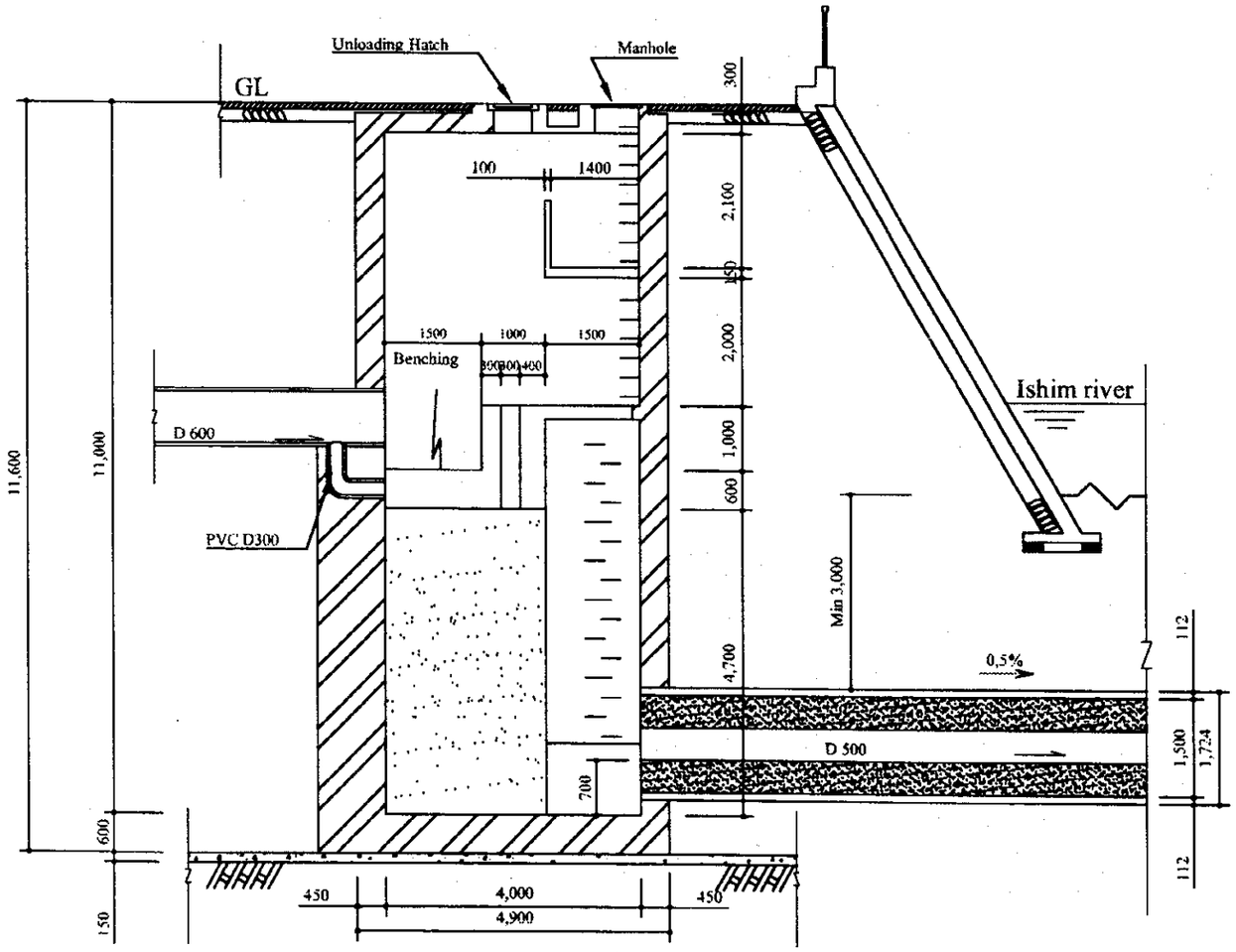
PROJECT	The Feasibility Study on Water Supply and Sewerage in the City of Astana
DRAWING TITLE	WASTEWATER COLLECTION SYSTEM PROPOSED WASTEWATER PUMP STATION KHC-52

DATE	SCALE	SHEET NO.
MARCH 2001	1/200	B-20

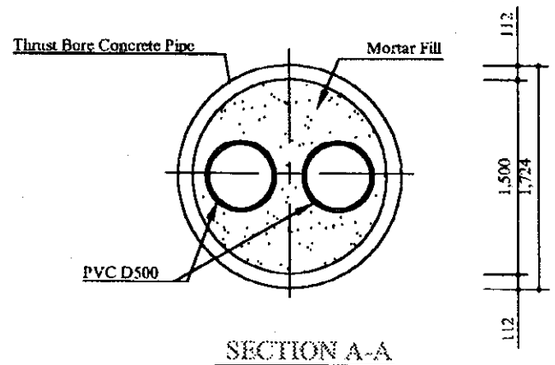


PLAN
Scale 1/100

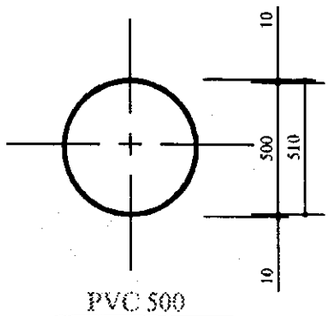




SECTION B-B
Scale 1/100



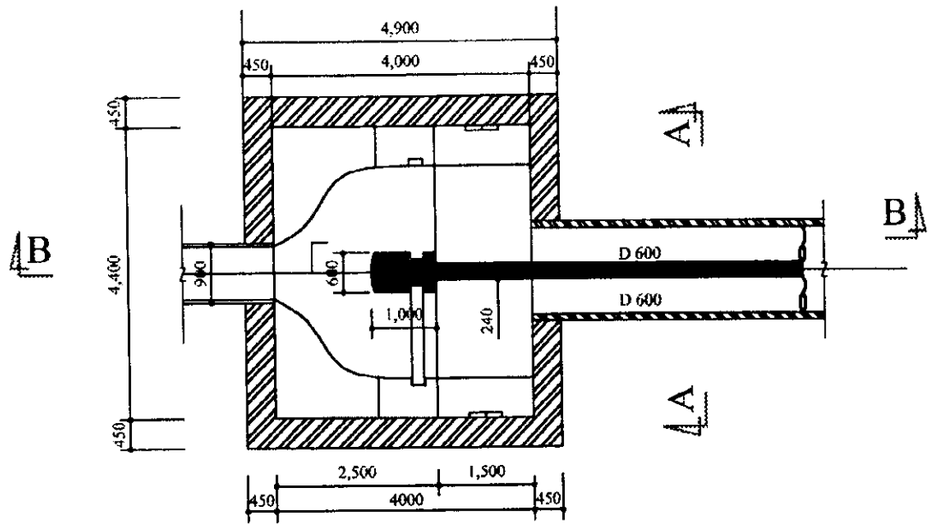
SECTION A-A
Scale 1/50



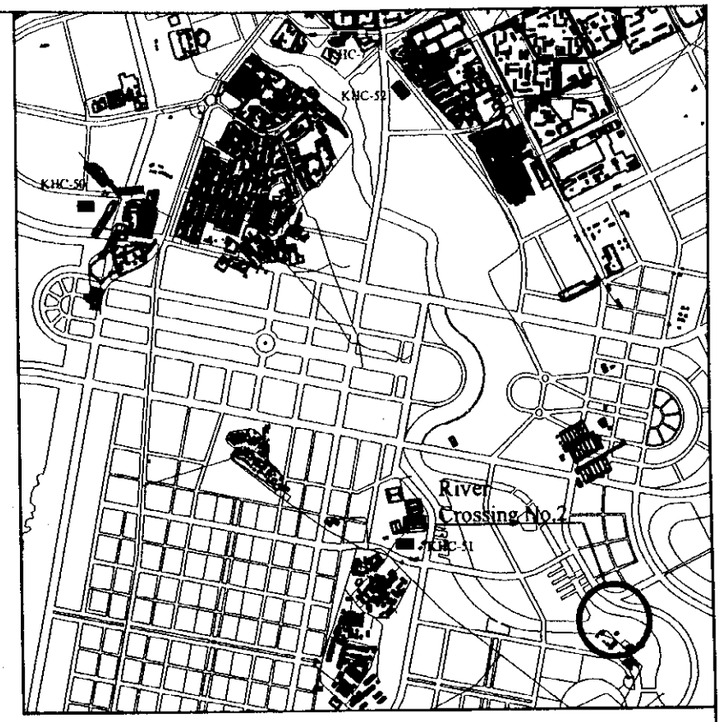
PVC 500
Scale 1/25

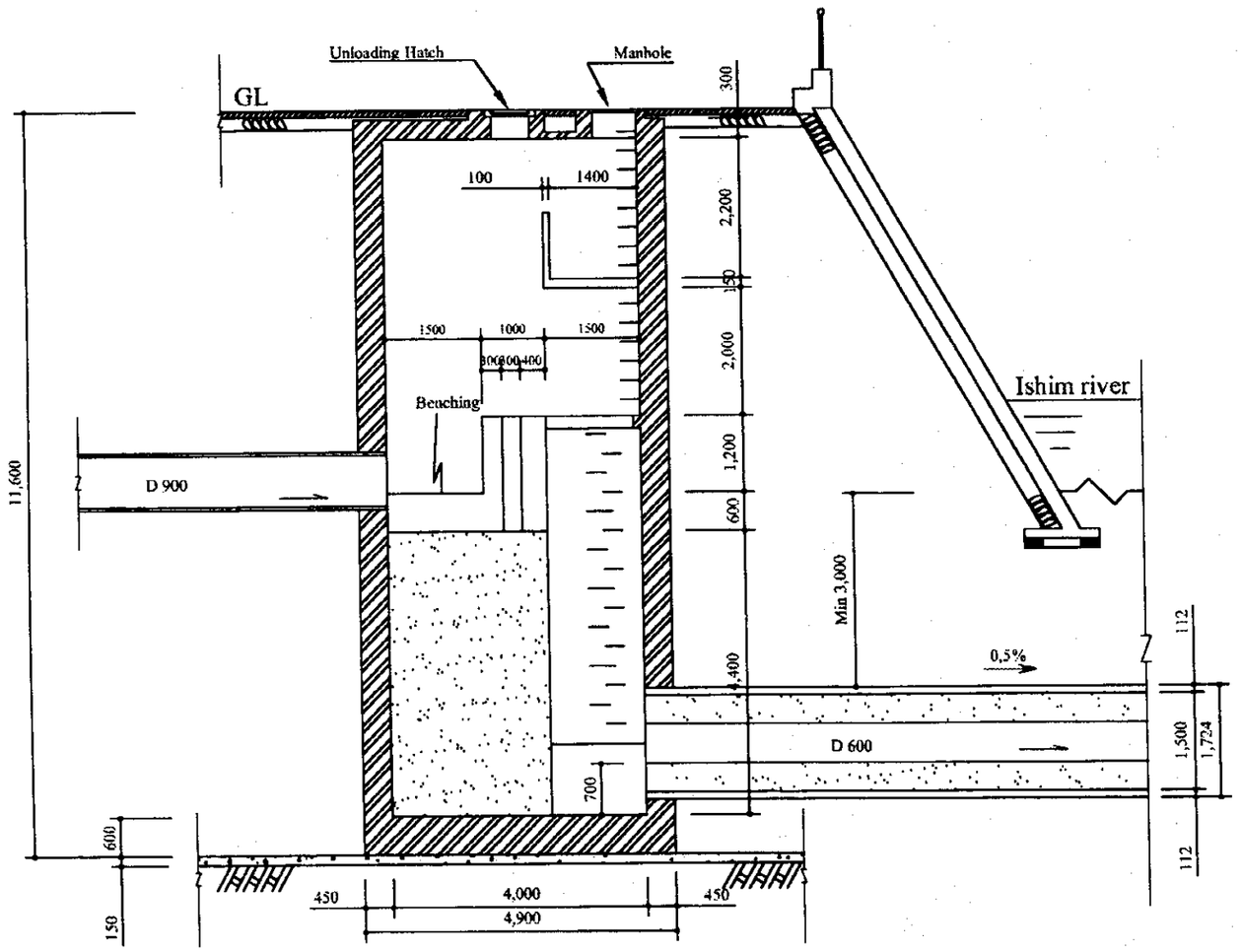
PROJECT	The Feasibility Study on Water Supply and Sewerage in the City of Astana
DRAWING TITLE	WASTEWATER COLLECTION SYSTEM PROPOSED RIVER CROSSING No.1

DATE	SCALE	SHEET NO.
MARCH 2001	1/100	B-21

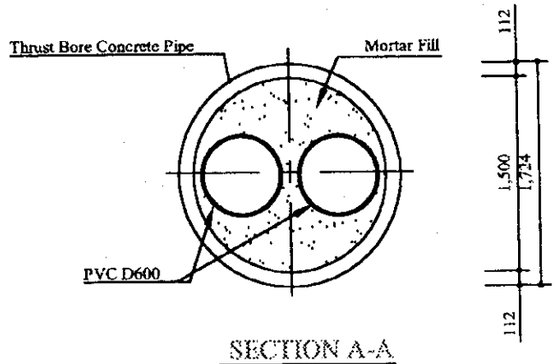


PLAN
Scale 1/100

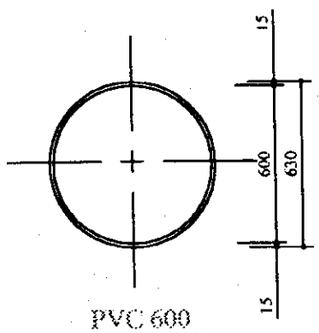




SECTION B-B
Scale 1/100



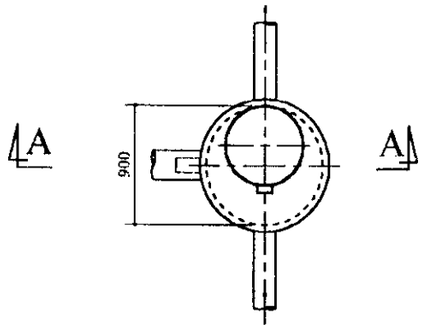
SECTION A-A
Scale 1/50



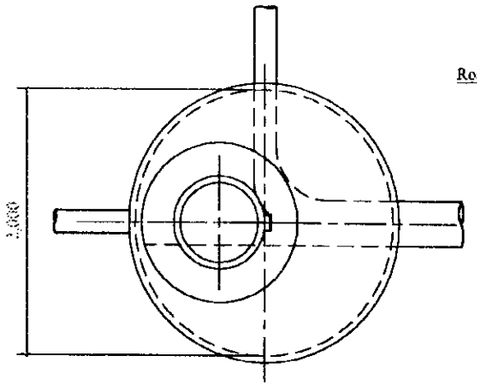
PVC 600
Scale 1/25

PROJECT	The Feasibility Study on Water Supply and Sewerage in the City of Astana
DRAWING TITLE	WASTEWATER COLLECTION SYSTEM PROPOSED RIVER CROSSING No.2

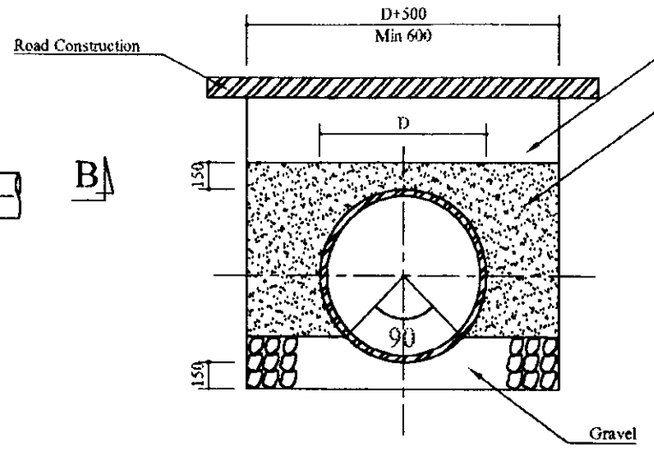
DATE	SCALE	SHEET NO.
MARCH 2001	1/100	B-22



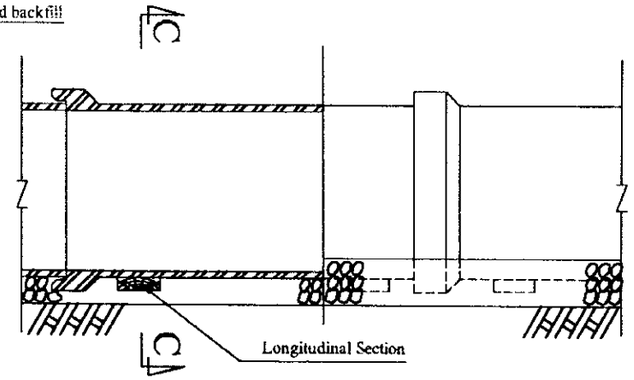
PLAN
Scale 1/50



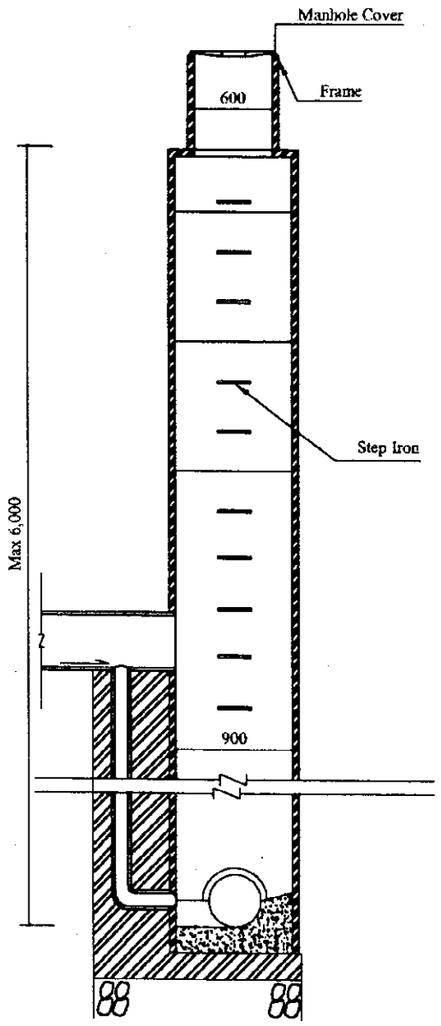
PLAN
Scale 1/50



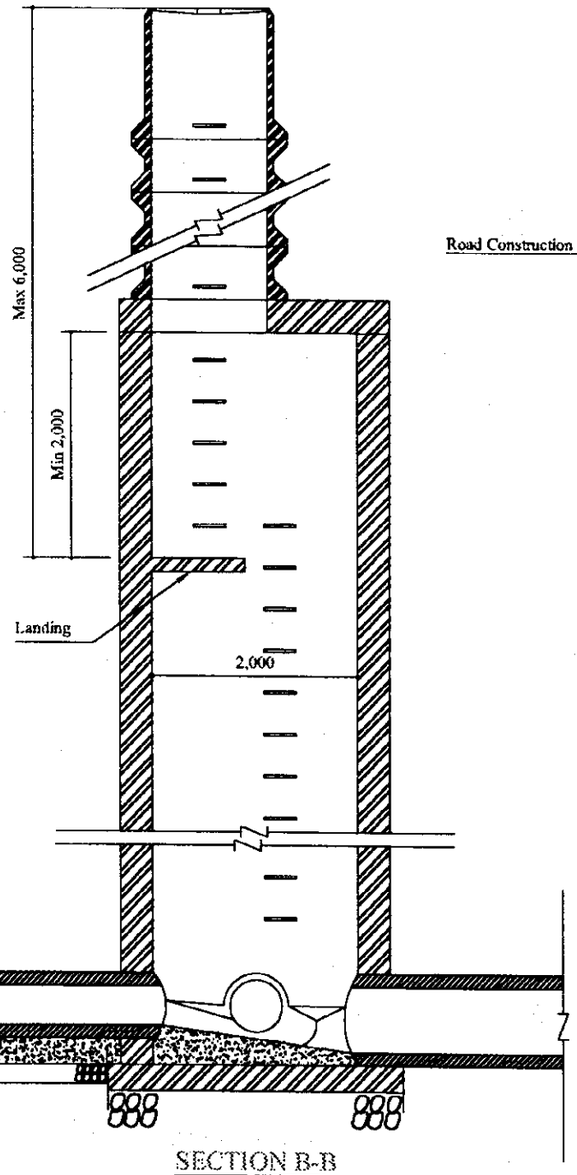
SECTION C-C
Scale 1/50



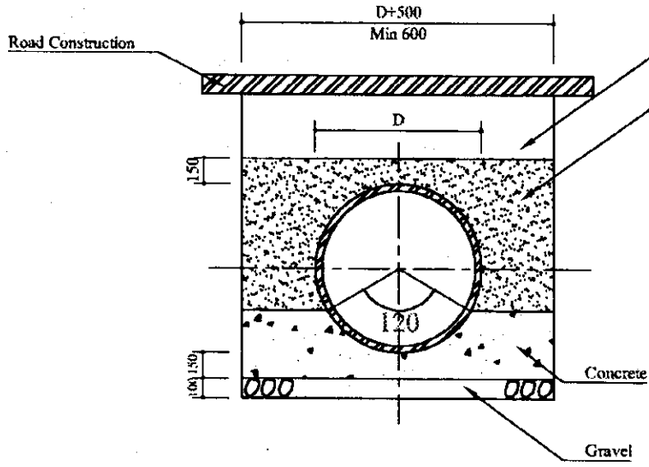
TYPICAL PIPE FOUNDATION ON FIRM GROUND
Scale 1/50



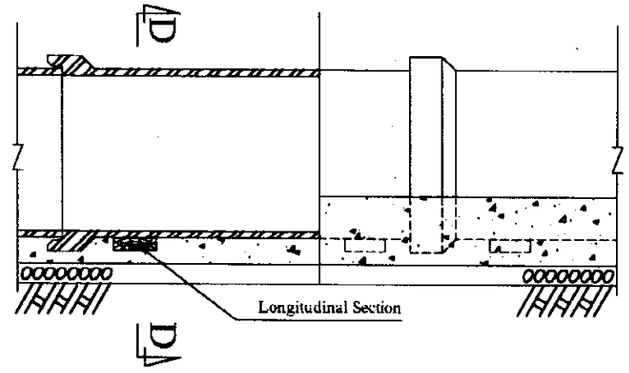
SECTION A-A
Scale 1/50



SECTION B-B
Scale 1/50

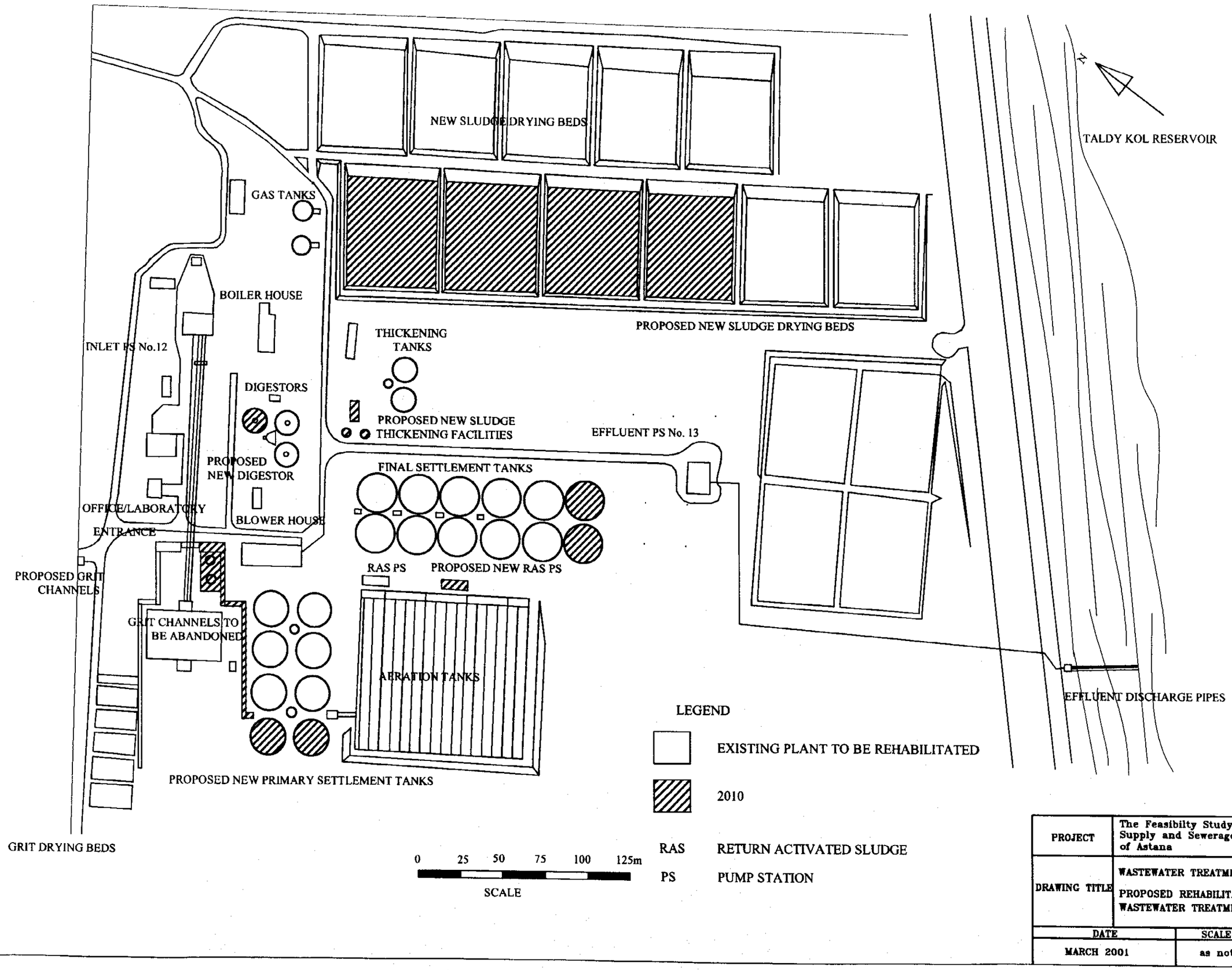


SECTION D-D
Scale 1/50



TYPICAL PIPE FOUNDATION ON SOFT GROUND
Scale 1/50

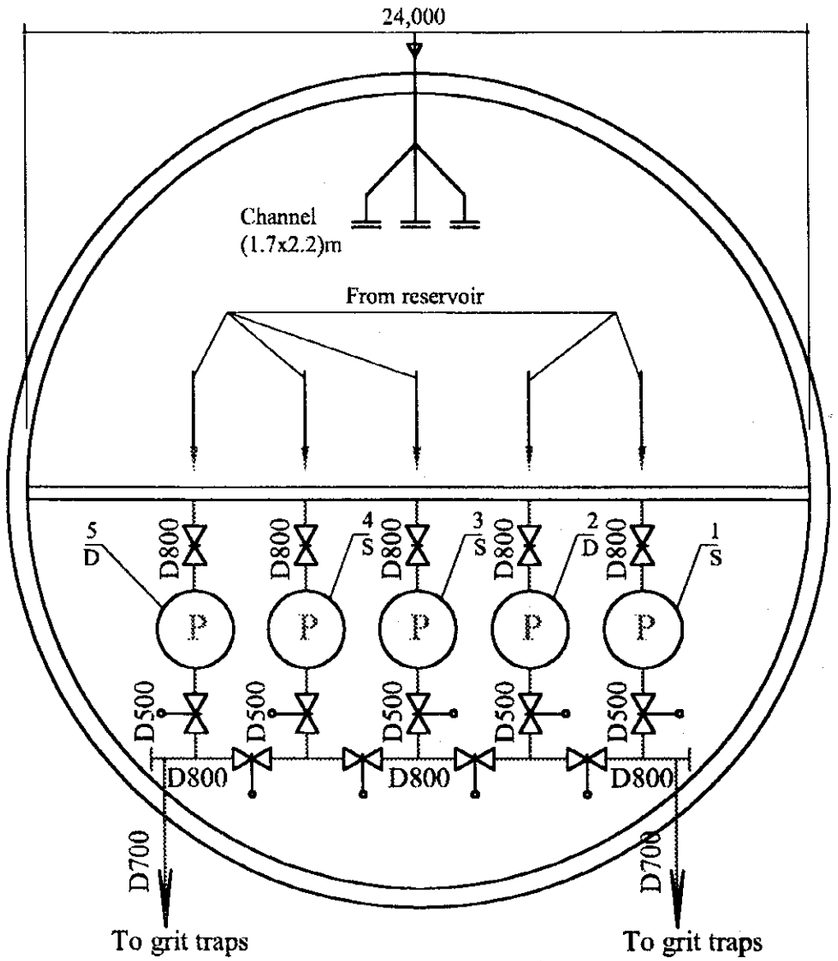
PROJECT	The Feasibility Study on Water Supply and Sewerage in the City of Astana		
DRAWING TITLE	WASTEWATER COLLECTION SYSTEM TYPICAL PIPELINE AND MANHOLE DETAILS		
DATE		SCALE	SHEET NO.
MARCH 2001		1/50	B-23



PROJECT	The Feasibilty Study on Water Supply and Sewerage in the City of Astana
DRAWING TITLE	WASTEWATER TREATMENT PLANT PROPOSED REHABILITATION OF WASTEWATER TREATMENT PLANT

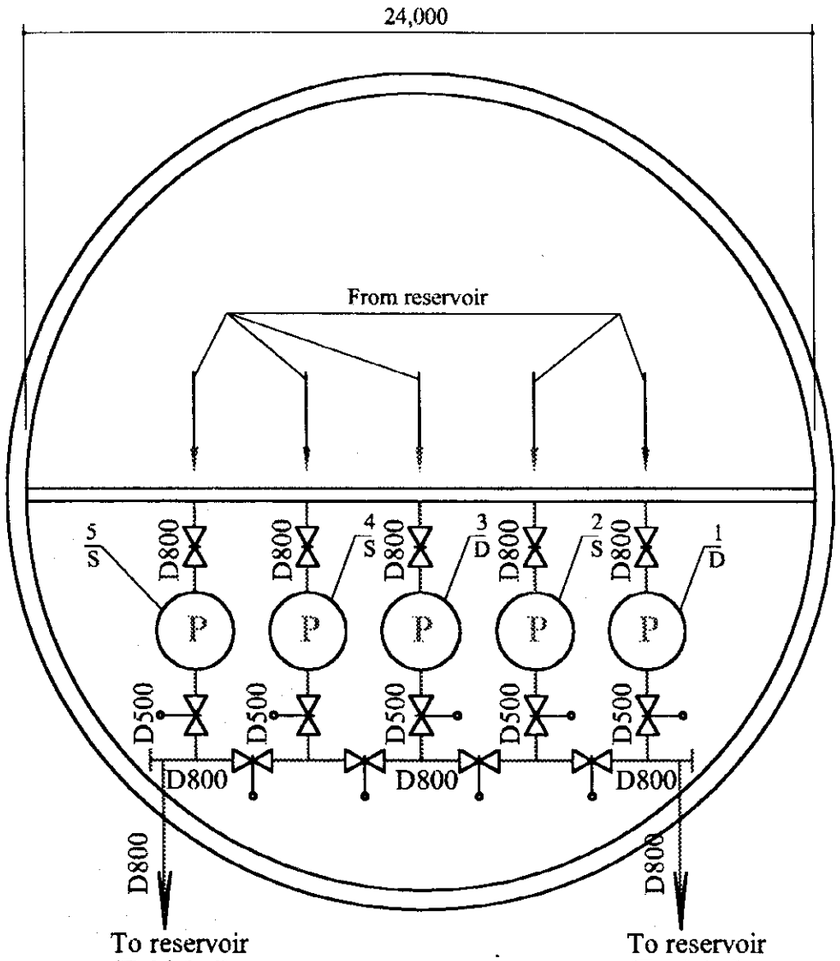
DATE	SCALE	SHEET NO.
MARCH 2001	as noted	B-24

KHC-12



1-CDV-2700/26.5
2-CDV-2700/26.5
3-CDV-2700/26.5
4-CDV-2700/26.5
5-CDV-2700/26.5

KHC-13

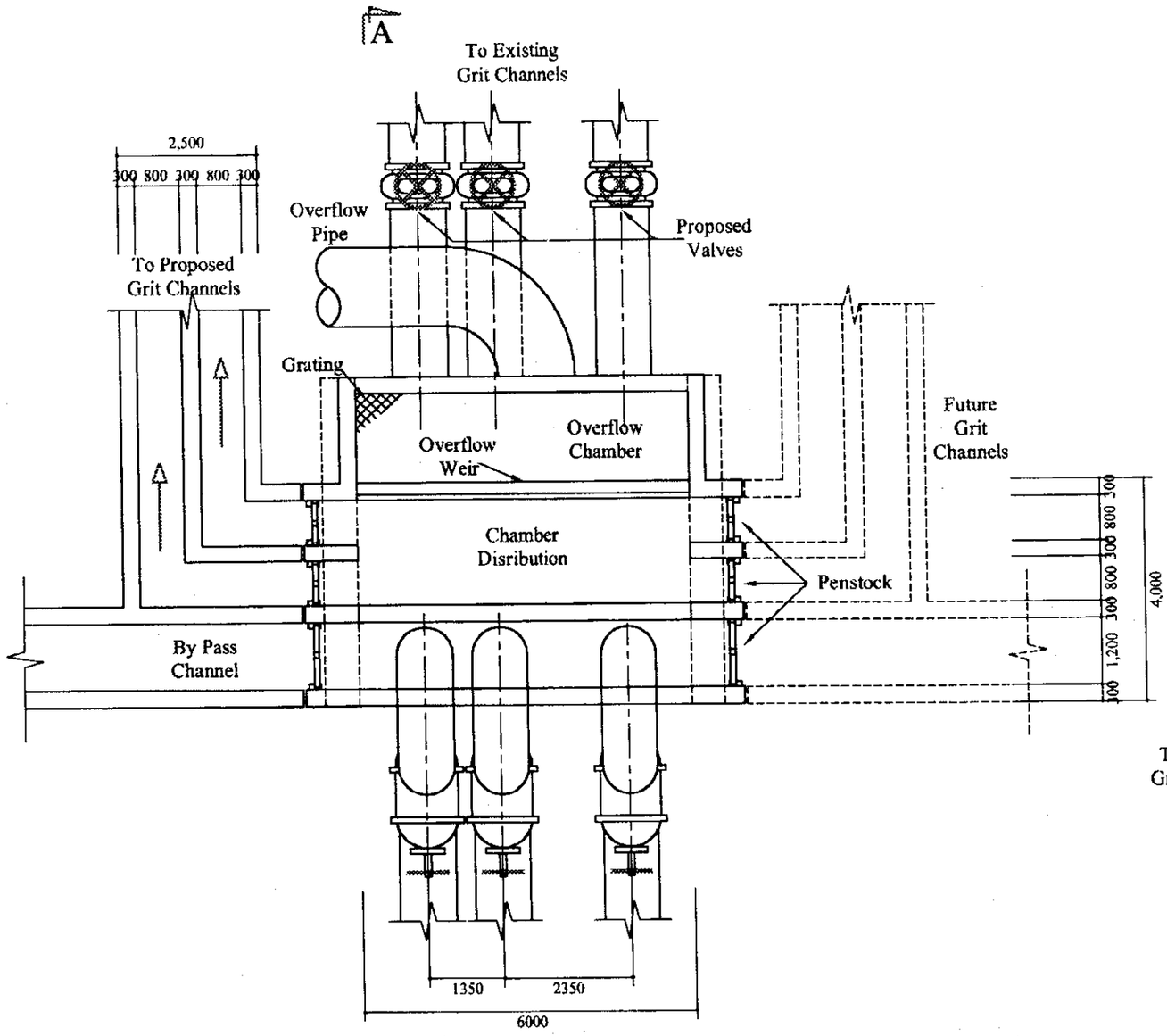


1-CDV-2700/26.5
2-CDV-2700/26.5
3-CDV-2700/26.5
4-CDV-2700/26.5
5-CDV-2700/26.5

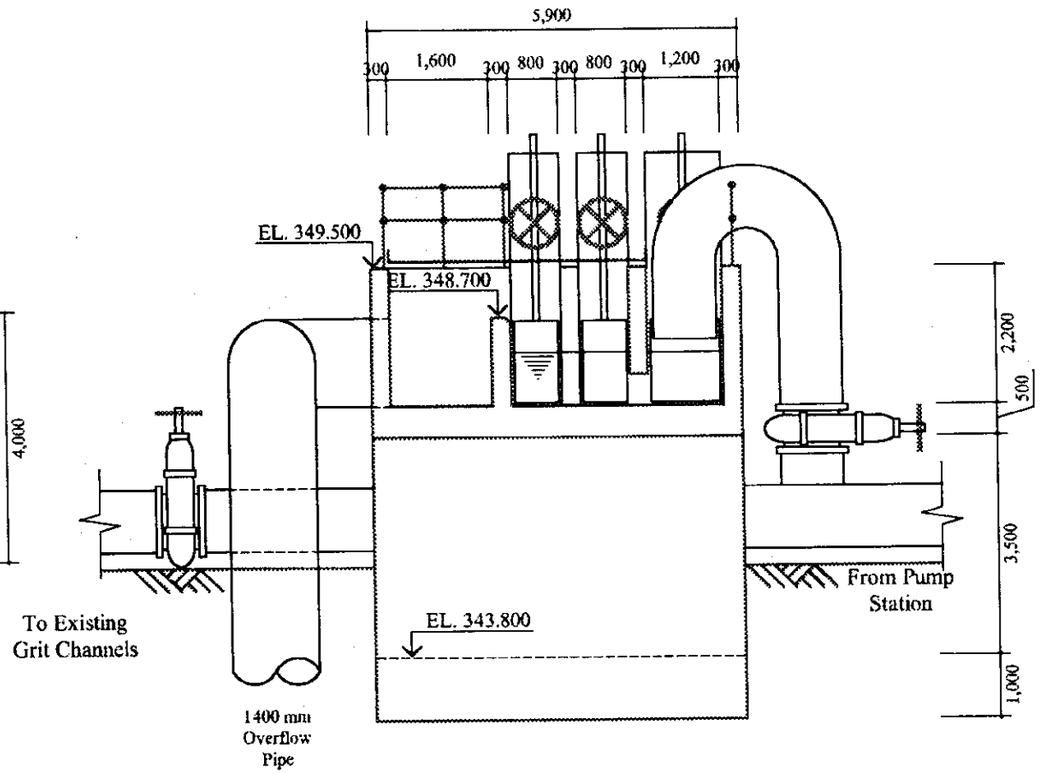
Legend
= screens

Note: 4/D: duty
2/S: standby

PROJECT	The Feasibility Study on Water Supply and Sewerage in the City of Astana
DRAWING TITLE	WASTEWATER TREATMENT PLANT SCHEMATIC ARRANGEMENT OF PUMP STATIONS No.12 and No.13
DATE	MARCH 2001
SCALE	1/200
SHEET NO.	B-25



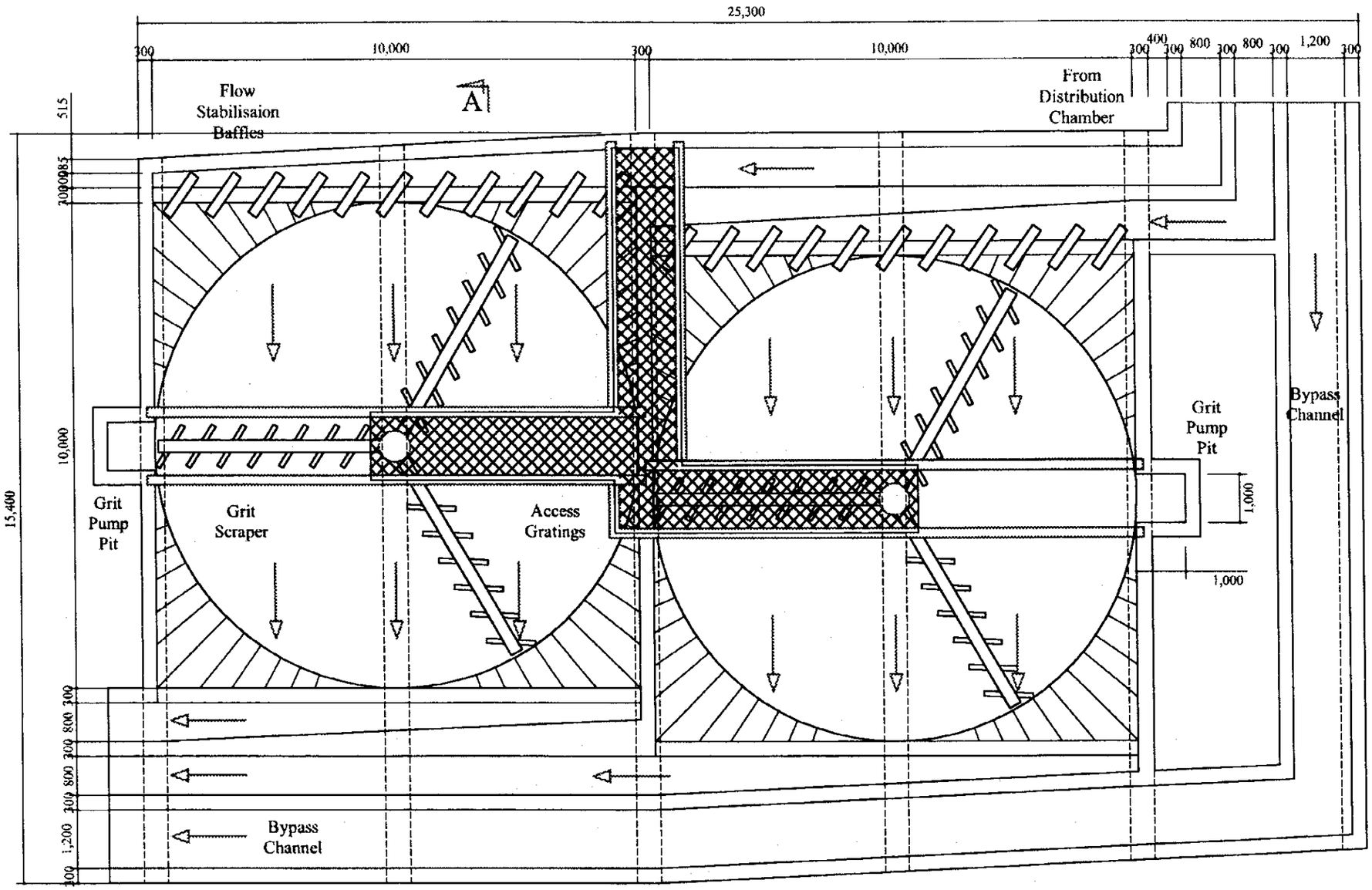
PLAN



SECTION A-A

PROJECT	The Feasibility Study on Water Supply and Sewerage in the City of Astana
DRAWING TITLE	WASTEWATER TREATMENT PLANT PROPOSED GRIT CHANNEL DISTRIBUTION CHAMBER

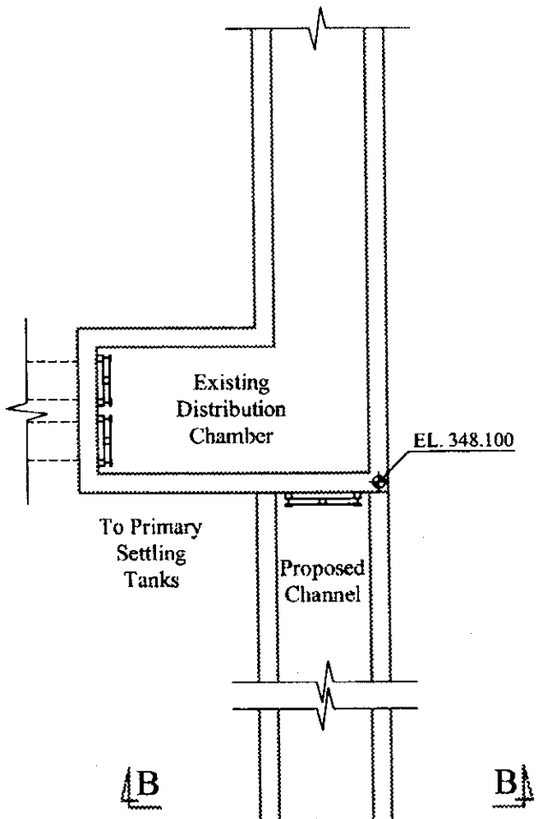
DATE	SCALE	SHEET NO.
MARCH 2001	1/100	B-26

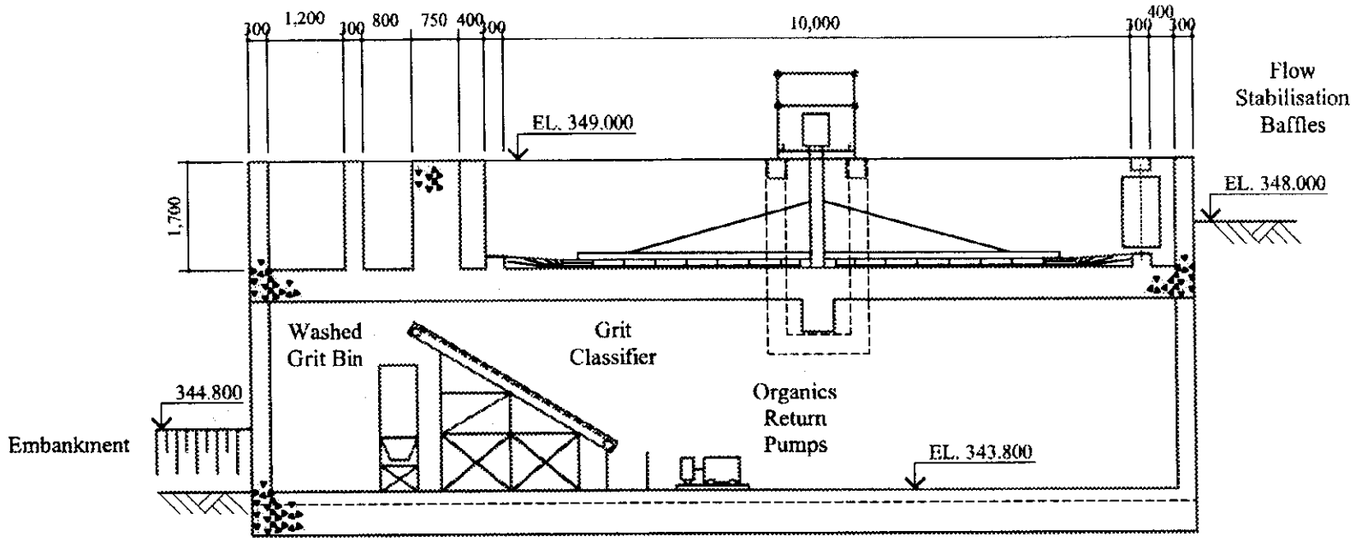


PLAN

PROJECT	The Feasibility Study on Water Supply and Sewerage in the City of Astana
DRAWING TITLE	WASTEWATER TREATMENT PLANT PROPOSED HORIZONTAL FLOW GRIT CHANNEL
DATE	MARCH 2001
SCALE	1/100
SHEET NO.	B-27

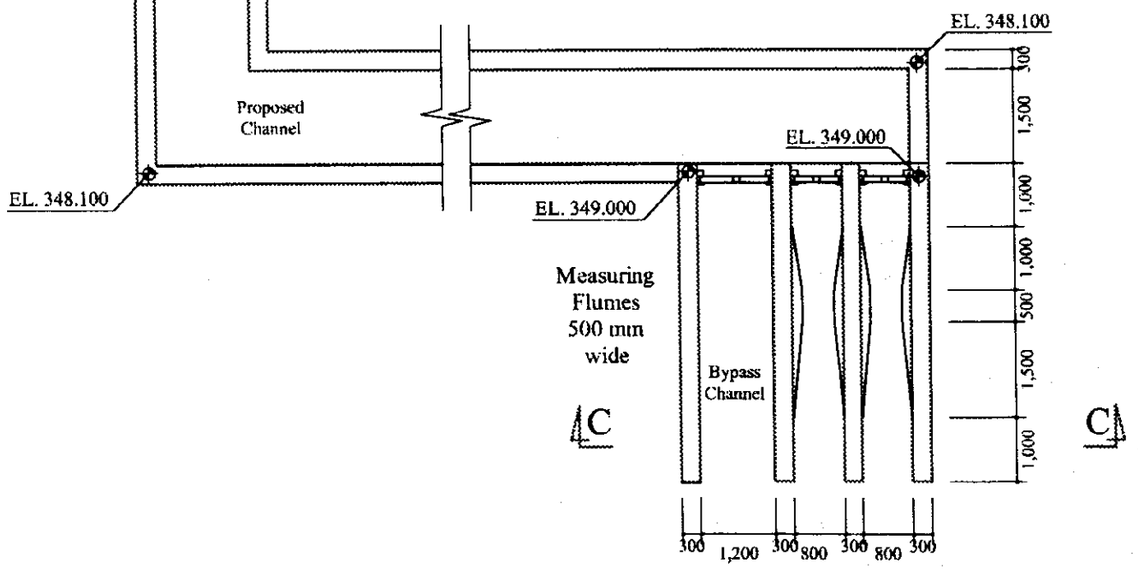
PLAN

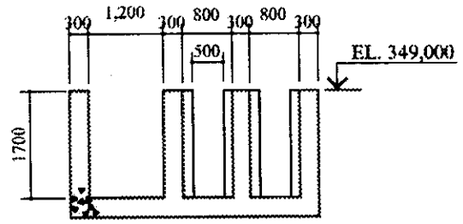




SECTION A-A

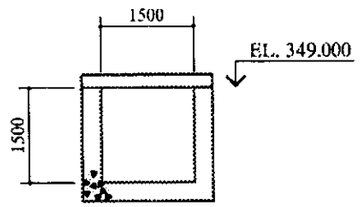
Grit Channel





Channel between grit channel and prinary settling tanks

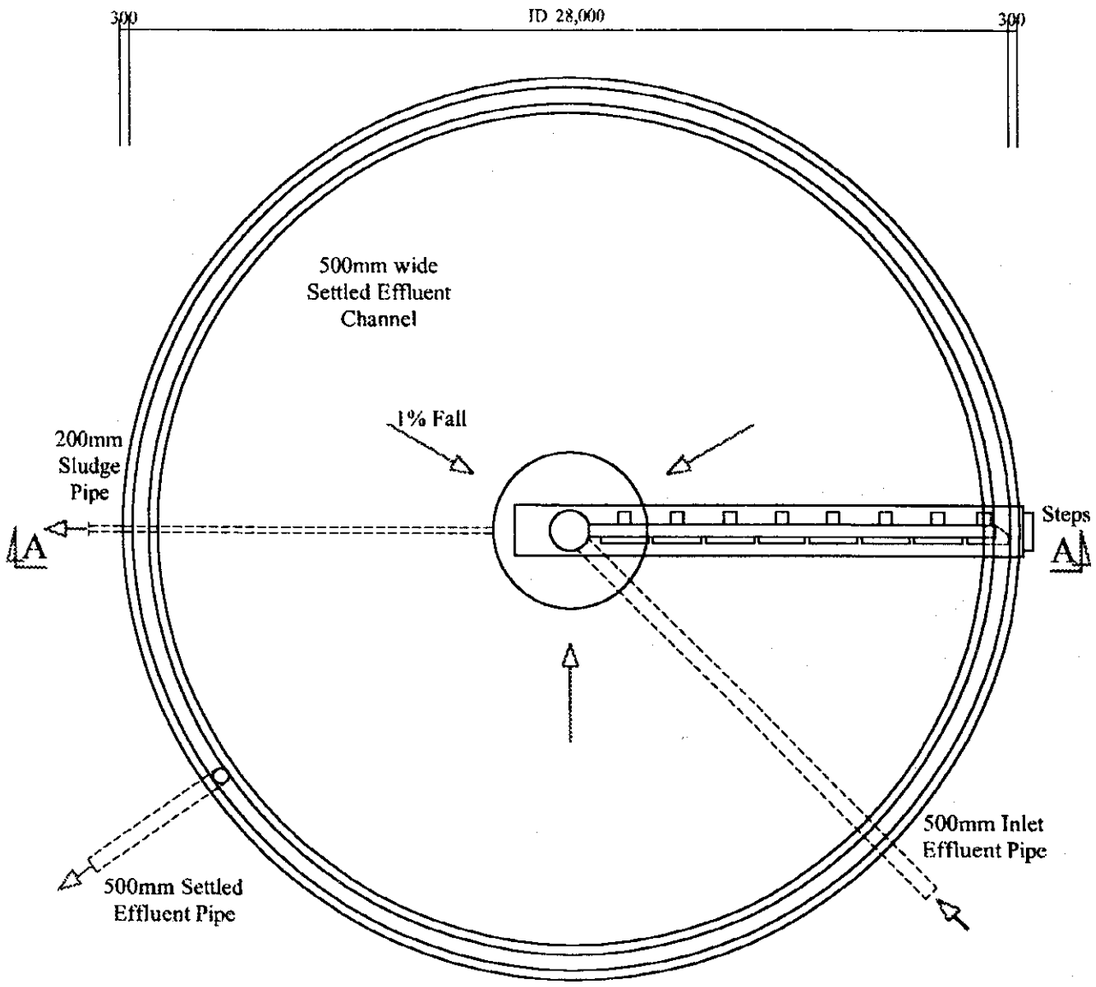
SECTION C-C



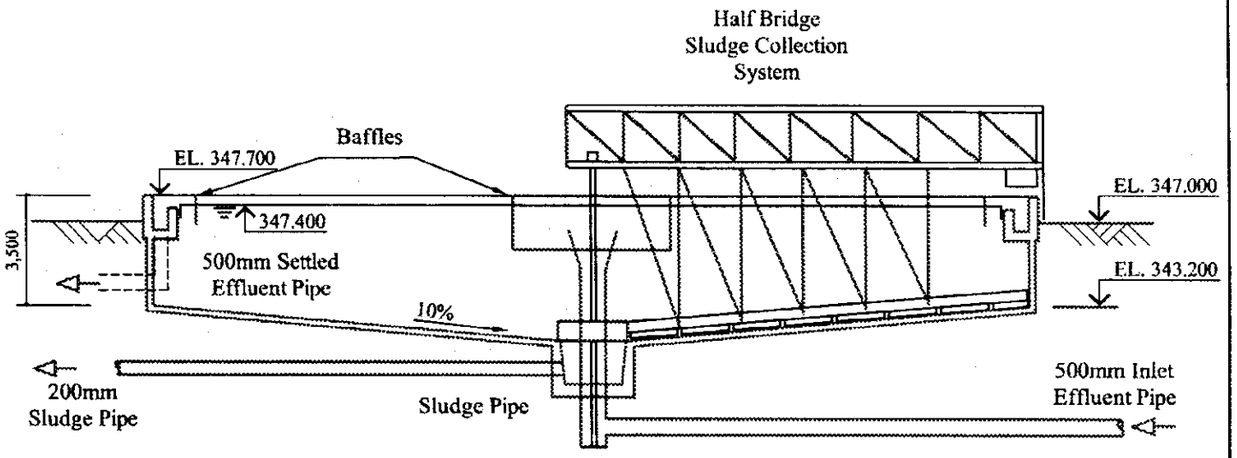
SECTION B-B

PROJECT	The Feasibility Study on Water Supply and Sewerage in the City of Astana
DRAWING TITLE	WASTEWATER TREATMENT PLANT PROPOSED CHANNEL TO PRIMARY SETTLING TANK

DATE	SCALE	SHEET NO.
MARCH 2001	1/100	B-28



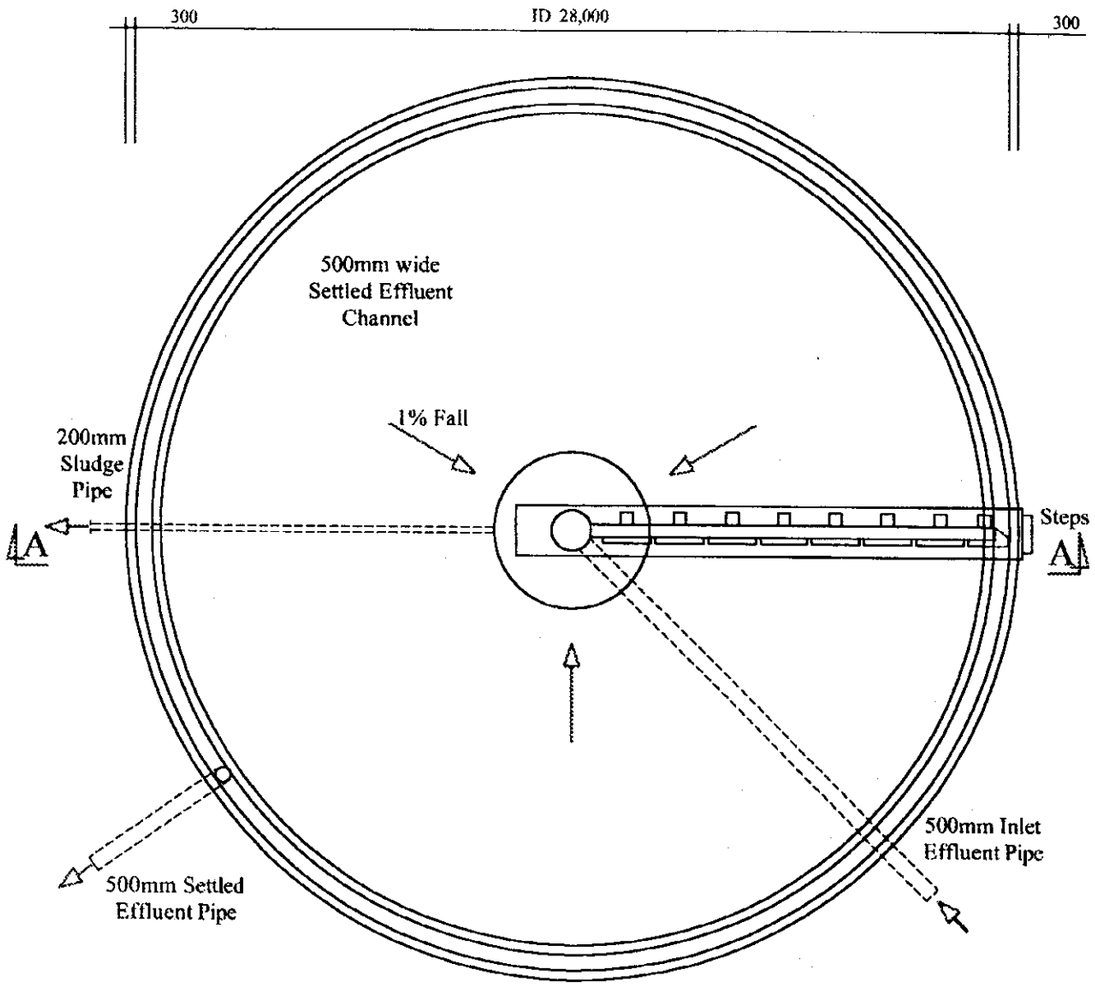
PLAN



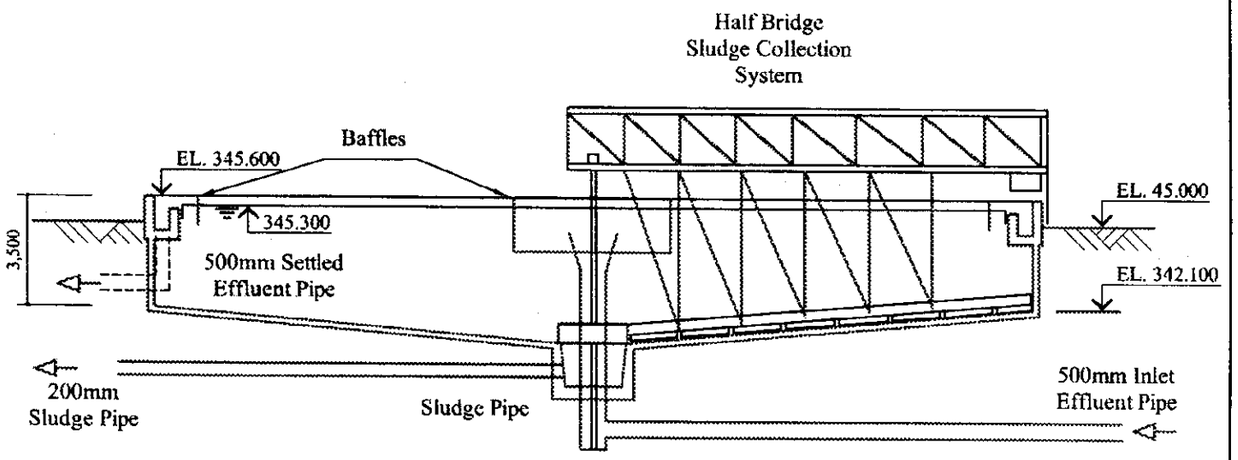
SECTION A-A

PROJECT	The Feasibility Study on Water Supply and Sewerage in the City of Astana
DRAWING TITLE	WASTEWATER TREATMENT PLANT PROPOSED PRIMARY SETTLEMENT TANK (#2)

DATE	SCALE	SHEET NO.
MARCH 2001	1/200	B-29



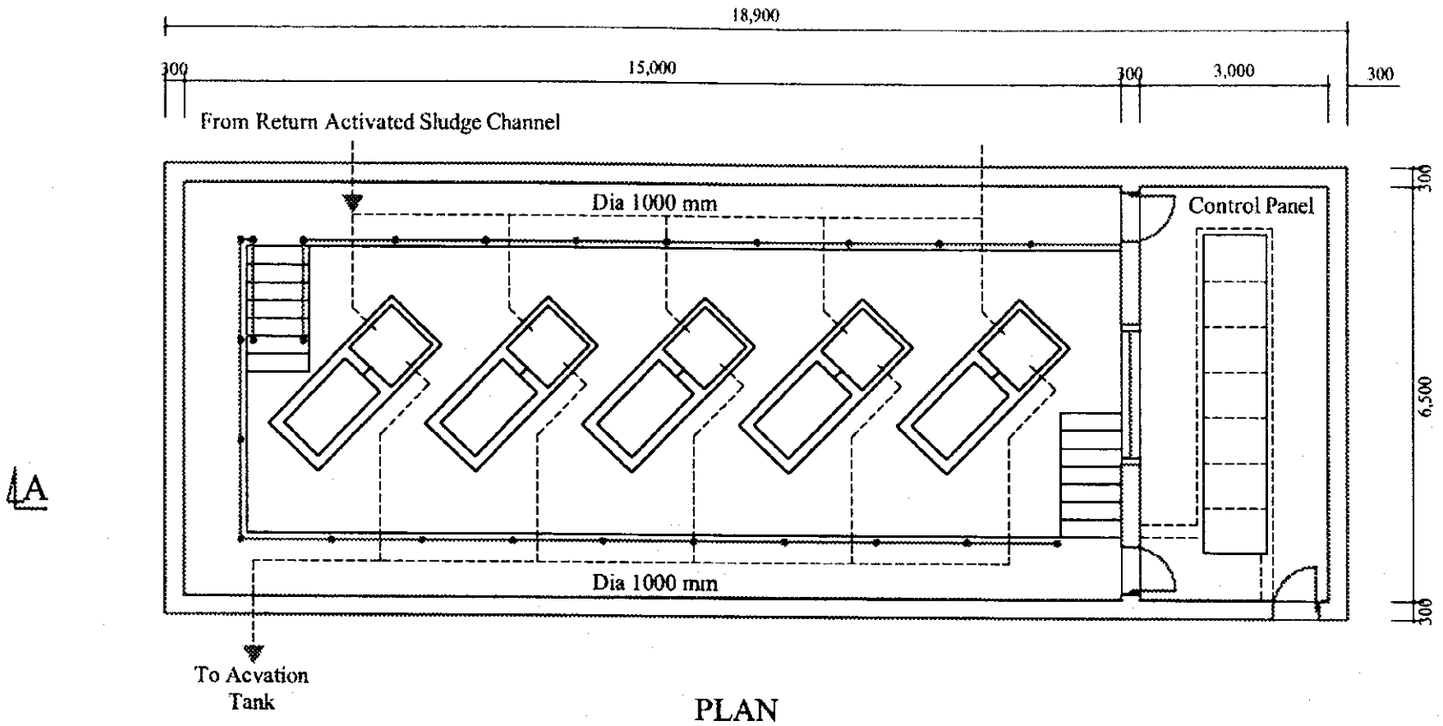
PLAN



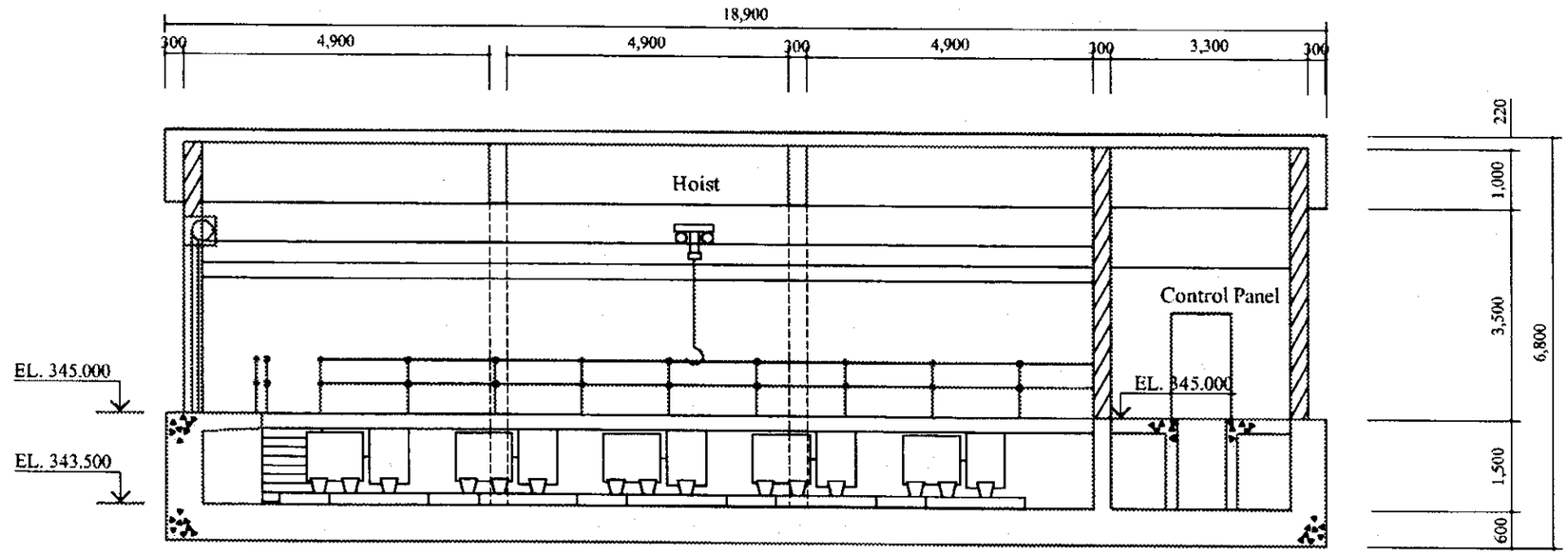
SECTION A-A

PROJECT	The Feasibility Study on Water Supply and Sewerage in the City of Astana
DRAWING TITLE	WASTEWATER TREATMENT PLANT PROPOSED FINAL SETTLEMENT TANK (#2)

DATE	SCALE	SHEET NO.
MARCH 2001	1/200	B-30



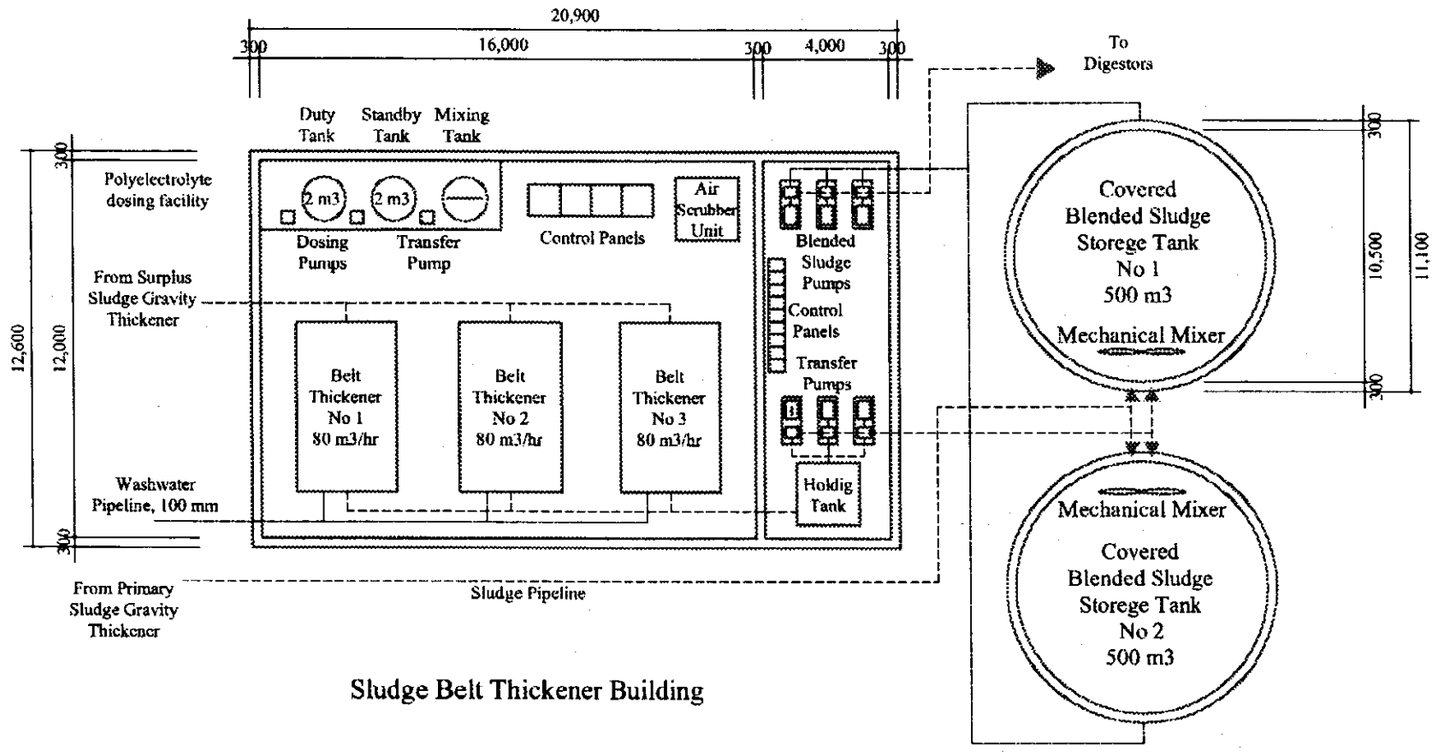
PLAN



A-A SECTION

PROJECT	The Feasibility Study on Water Supply and Sewerage in the City of Astana
DRAWING TITLE	WASTEWATER TREATMENT PLANT PROPOSED RETURN ACTIVATED SLUDGE PUMP STATION

DATE	SCALE	SHEET NO.
MARCH 2001	1/100	B-31



Sludge Belt Thickener Building

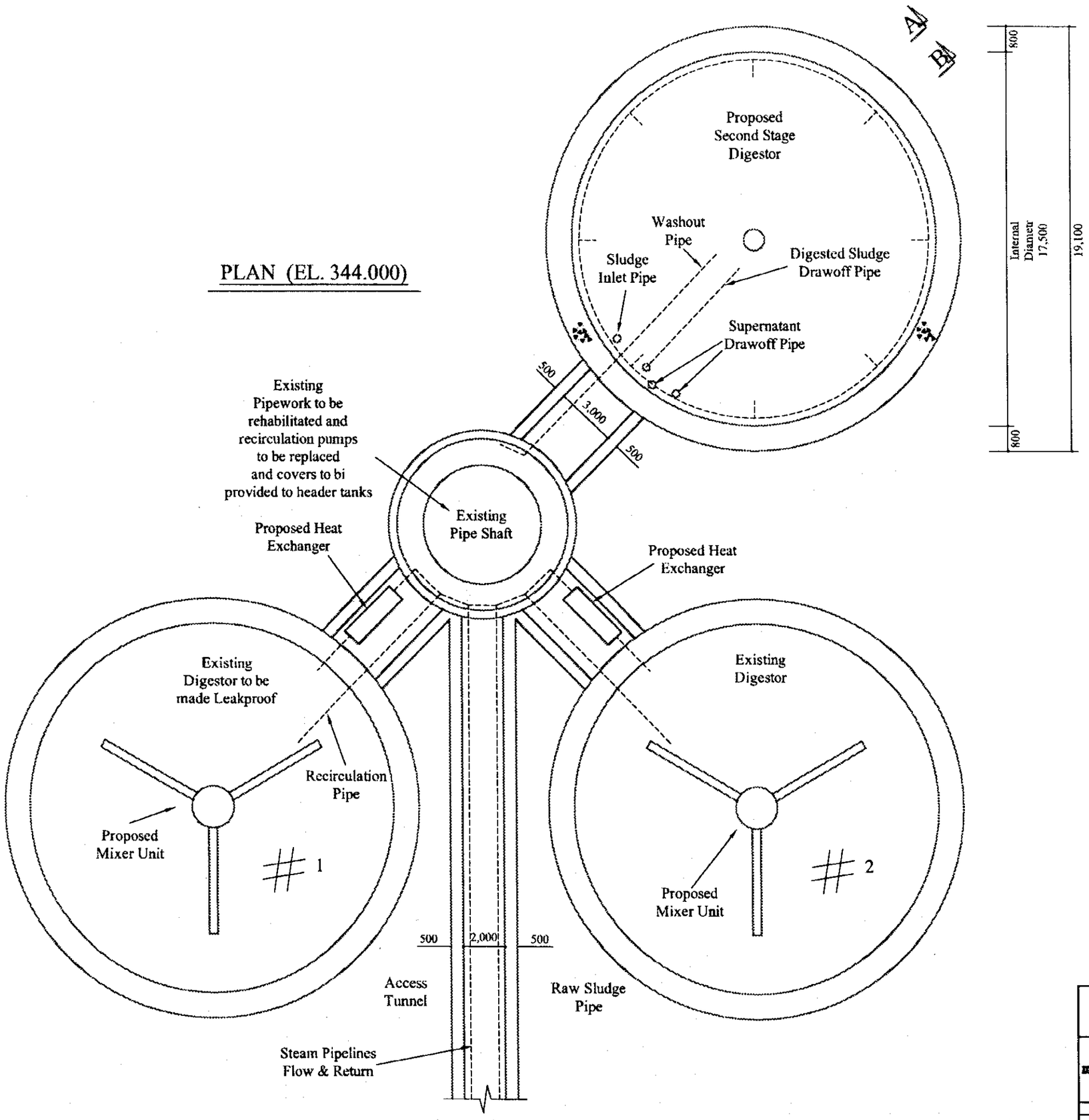
Reinforced Concrete
Storage Tanks

PLAN

PROJECT	The Feasibility Study on Water Supply and Sewerage in the City of Astana
DRAWING TITLE	WASTEWATER TREATMENT PLANT PROPOSED SLUDGE BELT THICKENENER FACILITY

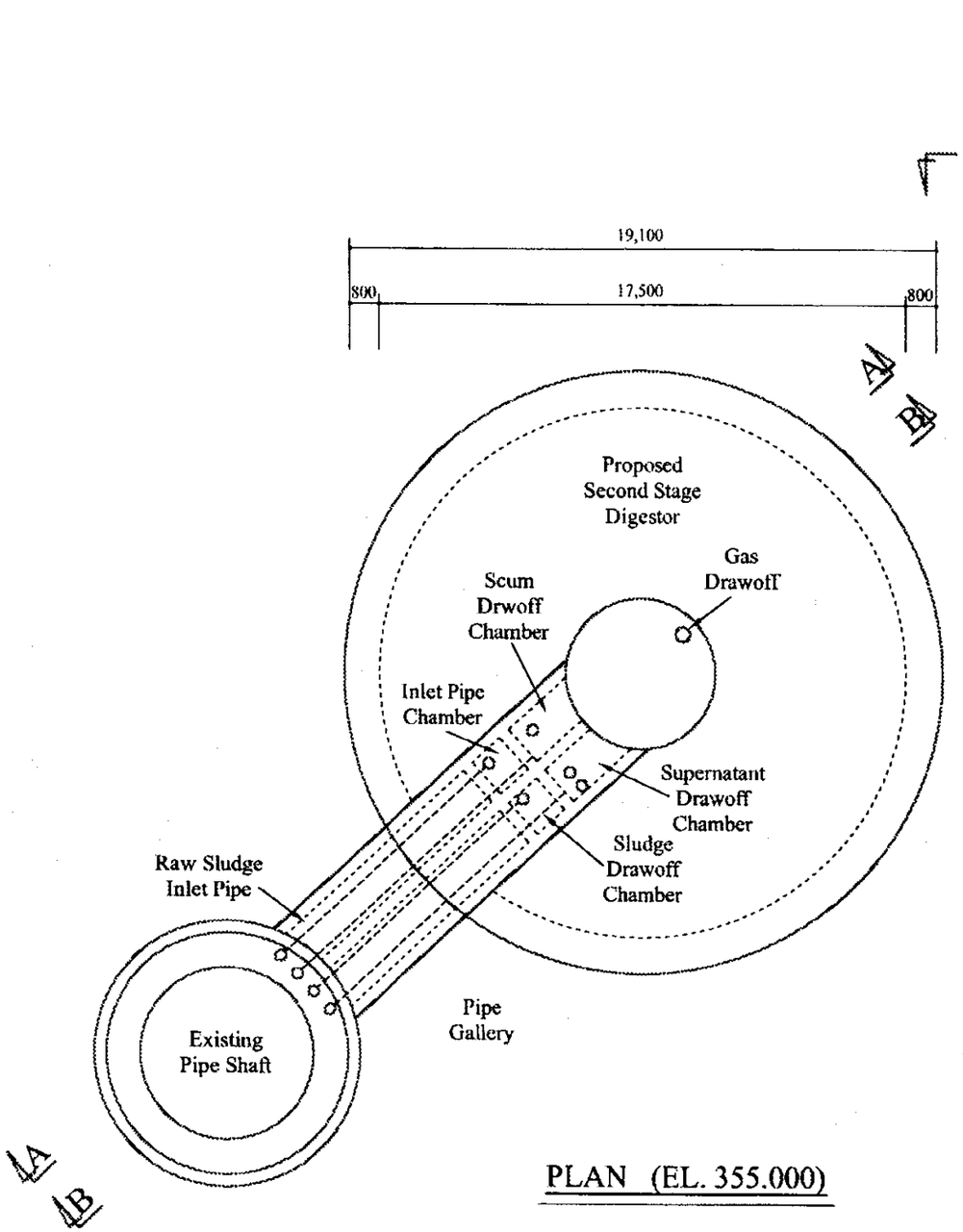
DATE	SCALE	SHEET NO.
MARCH 2001	1/200	B-32

PLAN (EL. 344.000)

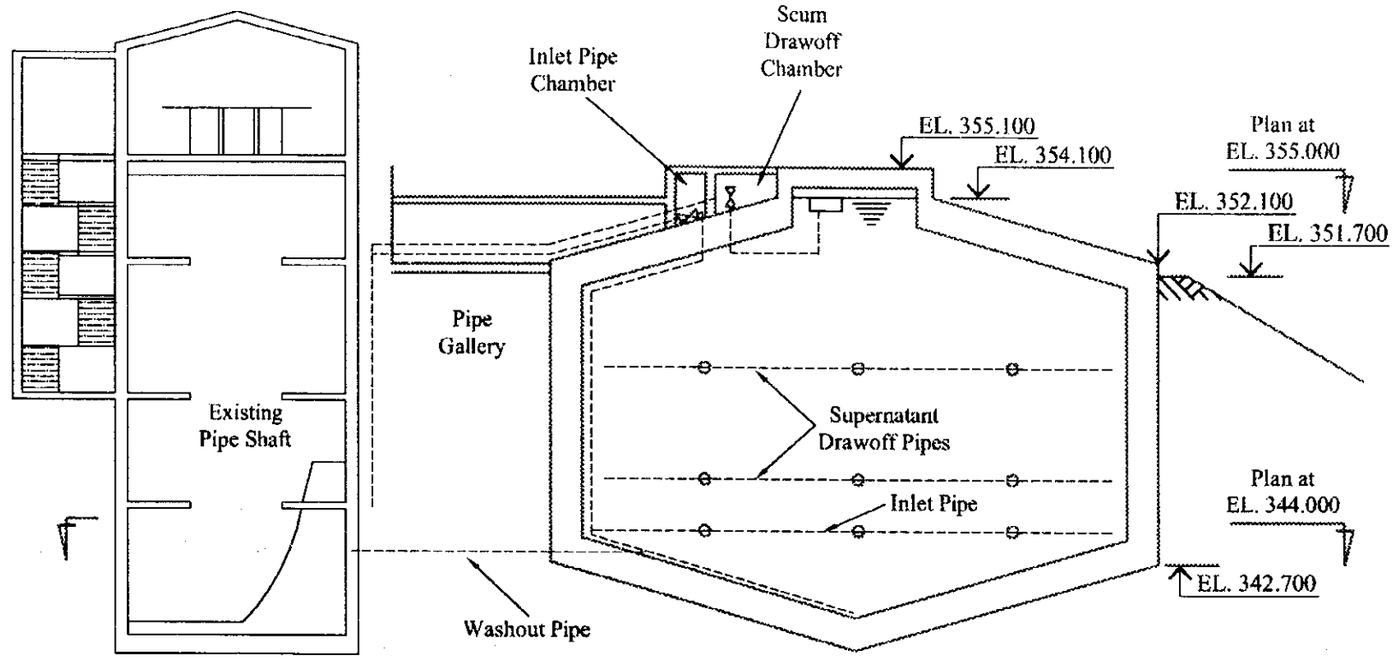


PROJECT	The Feasibility Study on Water Supply and Sewerage in the City of Astana
DRAWING TITLE	WASTEWATER TREATMENT PLANT PROPOSED SECONDARY DIGESTOR – PLAN

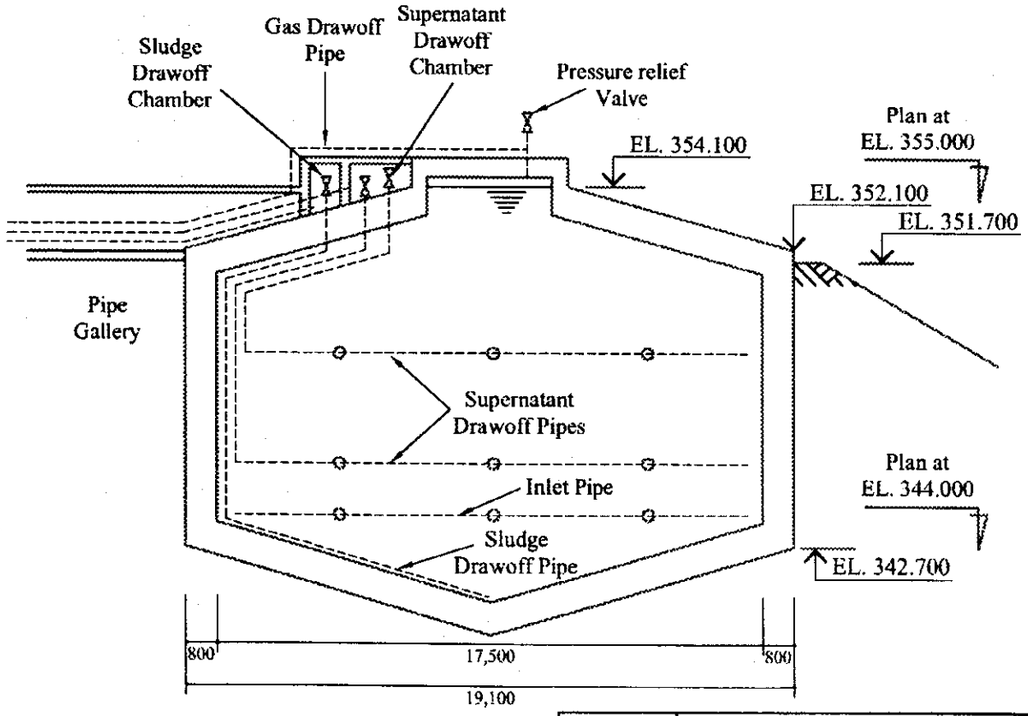
DATE	SCALE	SHEET NO.
MARCH 2001	1/200	B–33



PLAN (EL. 355.000)



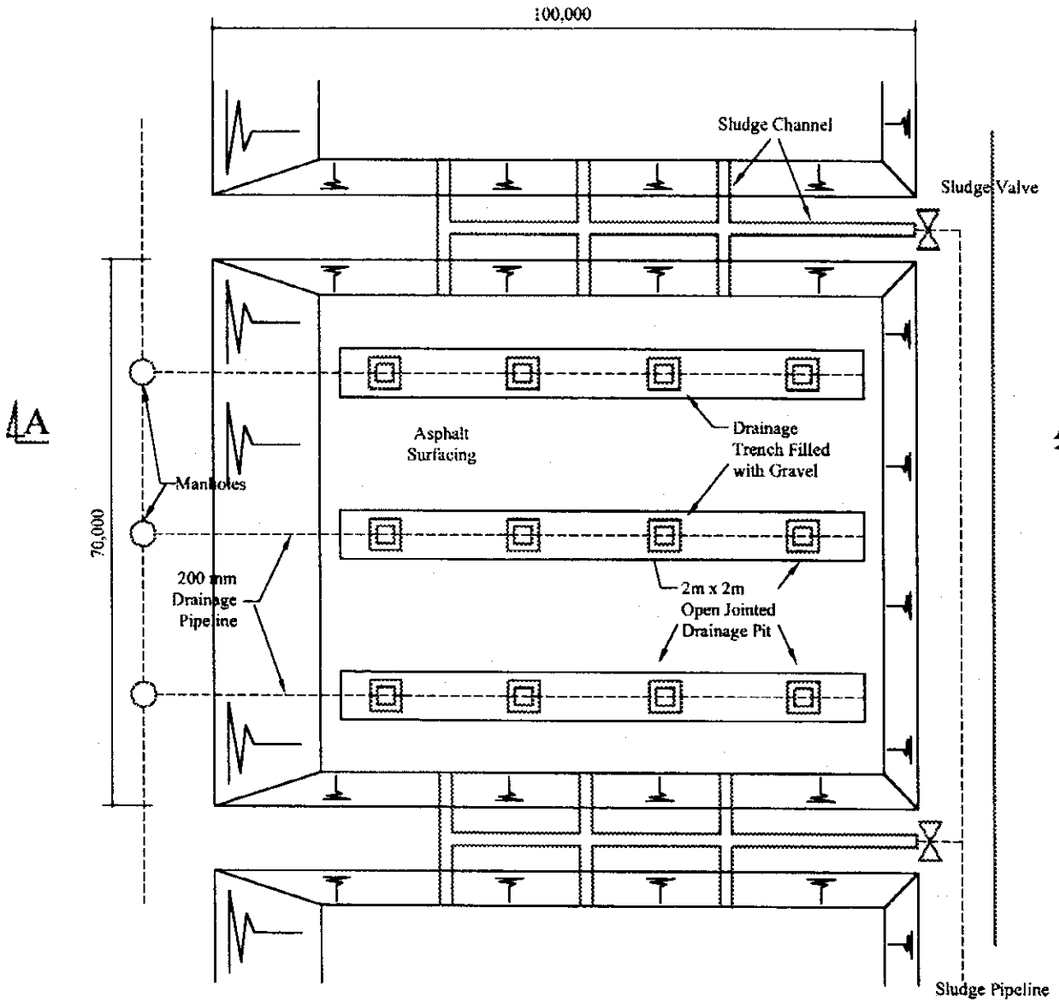
SECTION A-A



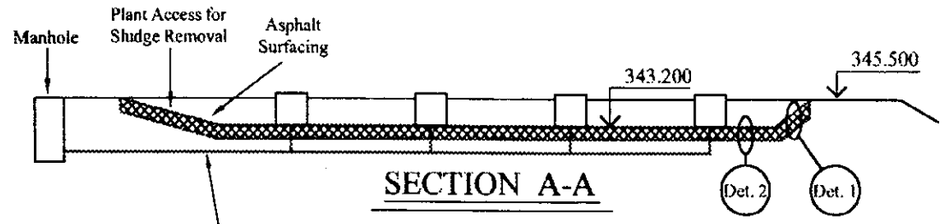
SECTION B-B

PROJECT	The Feasibility Study on Water Supply and Sewerage in the City of Astana
DRAWING TITLE	WASTEWATER TREATMENT PLANT PROPOSED SECONDARY DIGESTOR PLAN AND SECTIONS

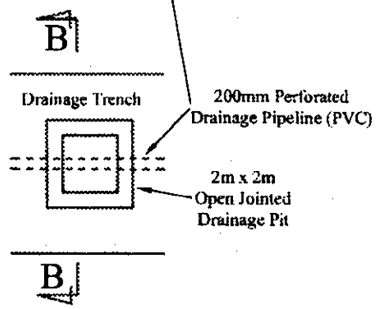
DATE	SCALE	SHEET NO.
MARCH 2001	1/200	B-34



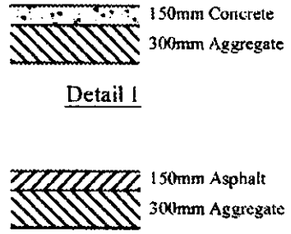
PLAN



SECTION A-A

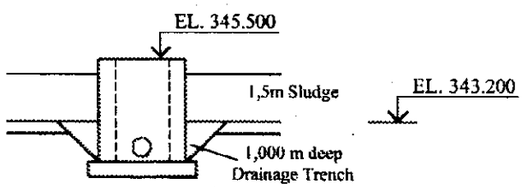


Plan of Drainage Pit



Detail 1

Detail 2



Section B-B (of Drainage Pit)

PROJECT	The Feasibility Study on Water Supply and Sewerage in the City of Astana
DRAWING TITLE	WASTEWATER TREATMENT PLANT PROPOSED SLUDGE DRYING BED (#6)
DATE	MARCH 2001
SCALE	not to scale
SHEET NO.	B-35

JICA