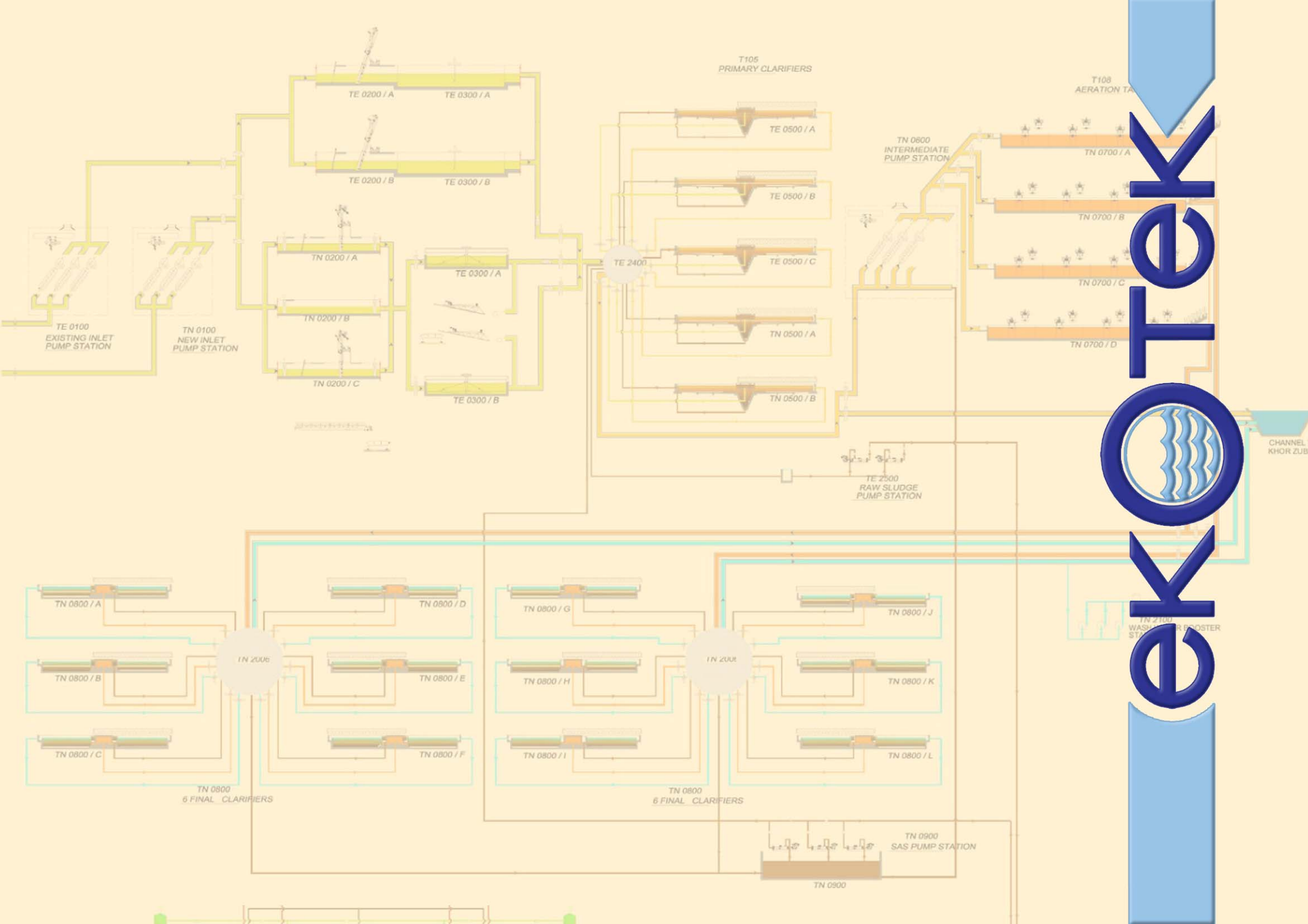
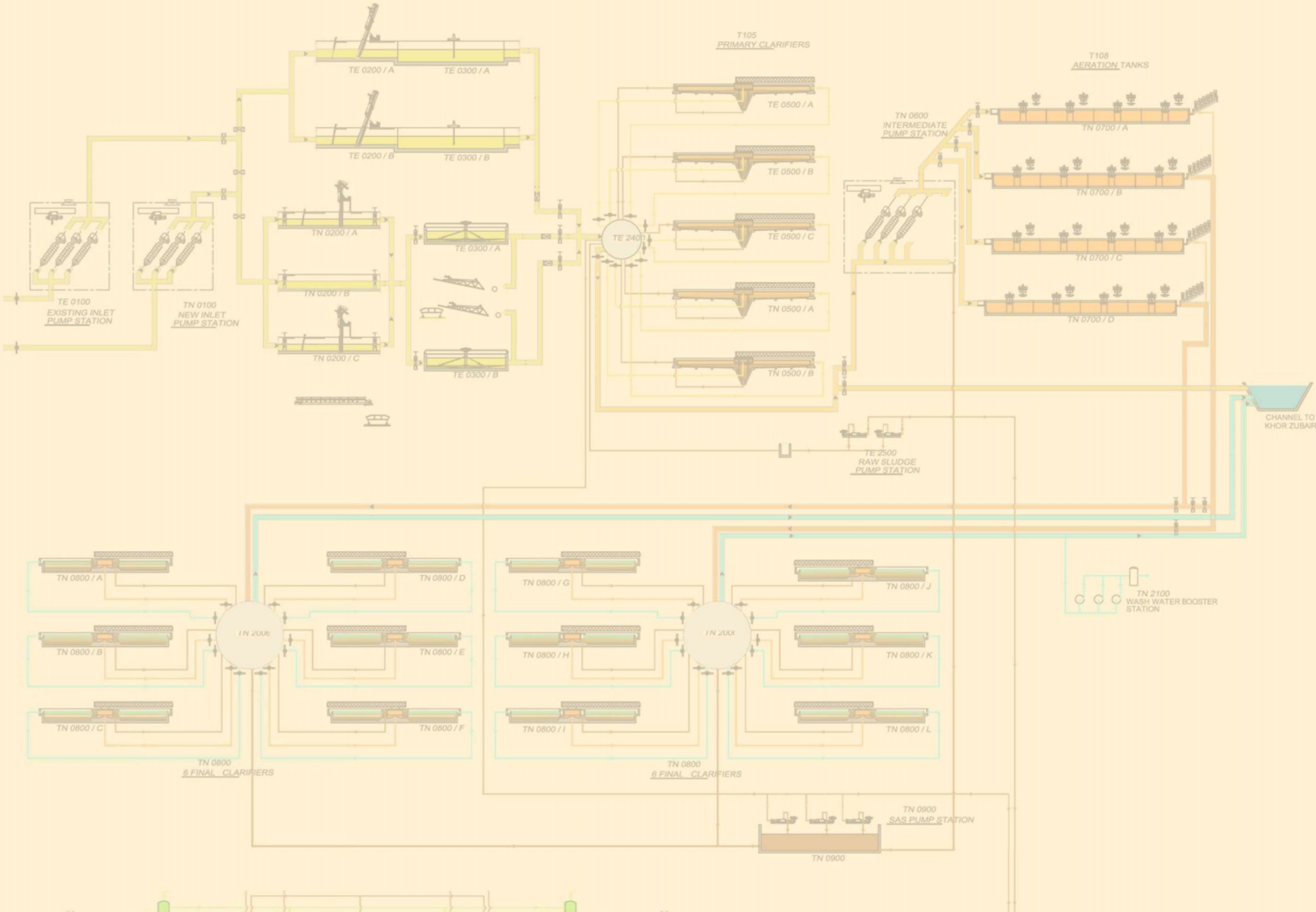

T105
PRIMARY CLARIFIERS
T108
AERATION TA
TE 0200 / A
TE 0300 / A
TE 0200 / B
TE 0300 / B
TE 0500 / A
TE 0500 / B
TE 0500 / C
TN 0500 / A
TN 0500 / B
TN 0600
INTERMEDIATE
PUMP STATION
TN 0700 / A
TN 0700 / B
TN 0700 / C
TN 0700 / D
TN 0200 / A
TN 0200 / B
TN 0200 / C
TE 0300 / A
TE 0300 / B
TE 2400
TE 0100
EXISTING INLET
PUMP STATION
TN 0100
NEW INLET
PUMP STATION
TE 2500
RAW SLUDGE
PUMP STATION
CHANNEL
KHOR ZUB
TN 0800 / A
TN 0800 / B
TN 0800 / C
TN 0800 / D
TN 0800 / E
TN 0800 / F
TN 2006
TN 0800
6 FINAL CLARIFIERS
TN 0800 / G
TN 0800 / H
TN 0800 / I
TN 0800 / J
TN 0800 / K
TN 0800 / L
TN 2008
TN 0800
6 FINAL CLARIFIERS
TN 2100
WASH
STA
TN 0900
SAS PUMP STATION
TN 0900


TE 0200 / A
TE 0300 / A
TE 0200 / B
TE 0300 / B
TE 0100
EXISTING INLET
PUMP STATION
TN 0100
NEW INLET
PUMP STATION
TN 0200 / A
TE 0300 / A
TN 0200 / B
TN 0200 / C
TE 0300 / B
T105
PRIMARY CLARIFIERS
TE 0500 / A
TE 0500 / B
TE 0500 / C
TN 0500 / A
TN 0500 / B
TE 2400
TN 0600
INTERMEDIATE
PUMP STATION
T108
AERATION TANKS
TN 0700 / A
TN 0700 / B
TN 0700 / C
TN 0700 / D
CHANNEL TO
KHOR ZUBAIR
TE 2500
RAW SLUDGE
PUMP STATION
TN 0800 / A
TN 0800 / D
TN 0800 / B
TN 0800 / E
TN 0800 / C
TN 0800 / F
TN 0800
6 FINAL CLARIFIERS
TN 0800 / G
TN 0800 / J
TN 0800 / H
TN 0800 / K
TN 0800 / I
TN 0800 / L
TN 0800
6 FINAL CLARIFIERS
TN 2100
WASH WATER BOOSTER
STATION
TN 0900
SAS PUMP STATION
TN 0900

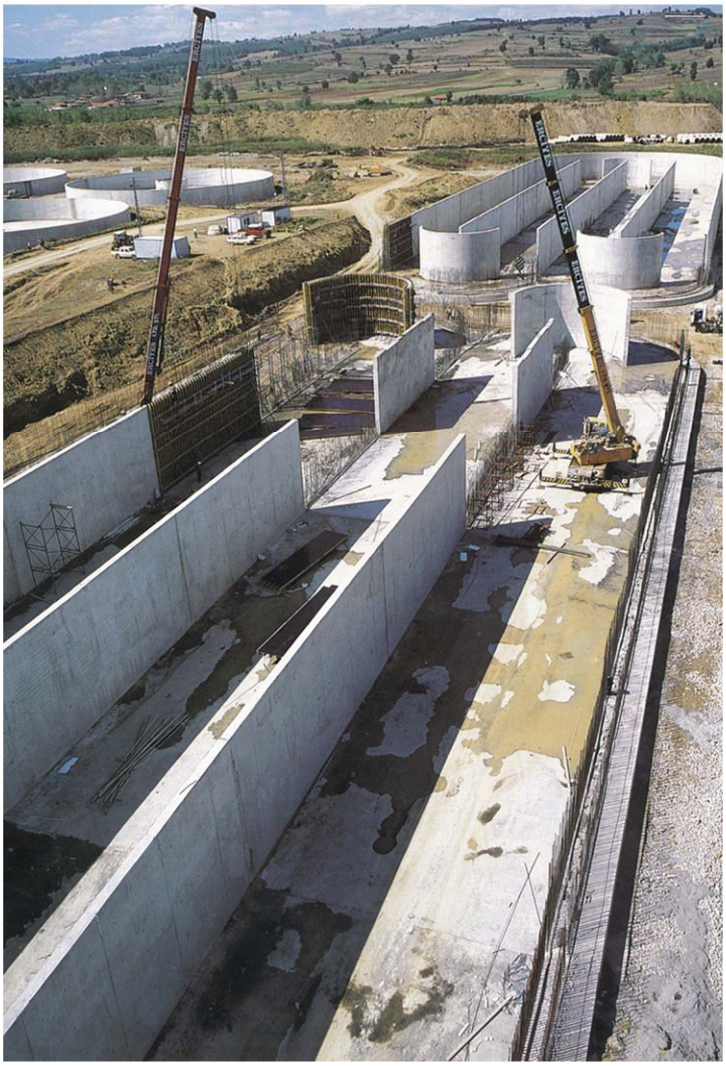
ENGINEERING DEPARTMENT

As a company dealing with engineering and consultancy services, EKOTEK employs a staff with good theoretical and academic background. And since it is also involved in construction and equipment supply as well as engineering designs, there is a considerable advantage with respect to other design companies, due to a better understanding and experience on the practicle aspects of construction and on the availability and economy of alternative equipment in the market. Thus, more realistic and economic solutions can be brought upon.

The engineering department of EKOTEK has successfully provided consultancy and construction supervision services to municipalities and government sector. Additionally has also served to other construction companies for construction design, and tender designs, cost estimates for large international turn-key projects.

ADAPAZARI WWTP and ÇARK CREEK REHABILITATION PROJECT

In the "Adapazarı WWTP, Çark Creek Rehabilitation and main interceptor construction" project which was tendered by the municipality to an international consortium,**EKOTEK** gave consultancy and construction supervision services to the municipality. In this project FIDIC specifications were used and the finance was provided by the contractor.



Details of the project are as follows:

1. **EMPLOYER** : Municipality of Adapazarı
2. **CONTRACTOR :** (Balfour Beatty / BRITTAIN – Metiş/TURKEY–Preussag Wassertechnic/GERMANY) Consortium
3. **CONTRACT DATE** : 16/05/1996
4. **END OF CONSTRUCTION** : 08/02/2000
5. **CONTRACT PRICE** : 223,807,009.- DM
6. **SCOPE OF WORK:**

6.1. WWTP:

Equivalent Populatin : 745,500
Design Flow : 271,730 m3/day
Average Organic Loading : 44,730 kg/day

6.2. ÇARK CREEK REHABILITATION:

Scope : Converting the channel bottom to a concrete channel and forming rip-raps on the slopes Total Length : 7400 mt

6.3. MAIN INTERCEPTORS:

Diameter and Length : 2400 mm and 4111 mt
Pipe Type : Steam cured concrete pipe

6.4. SECONDARY INTERCEPTORS:

Diameter and Length : 1200 mm-6186 mt;
1400 mm-1771 mt; 1600 mm-755;
300 mm-1236 mt; 400 mm-3803 mt;
500 mm-2225 mt
Pipe Type : Steam cured concrete pipe


ATIKSU ARITMA TESİSİ ÇALIŞMALARI

Dev Projeye Uluslararası Konsorsiyum

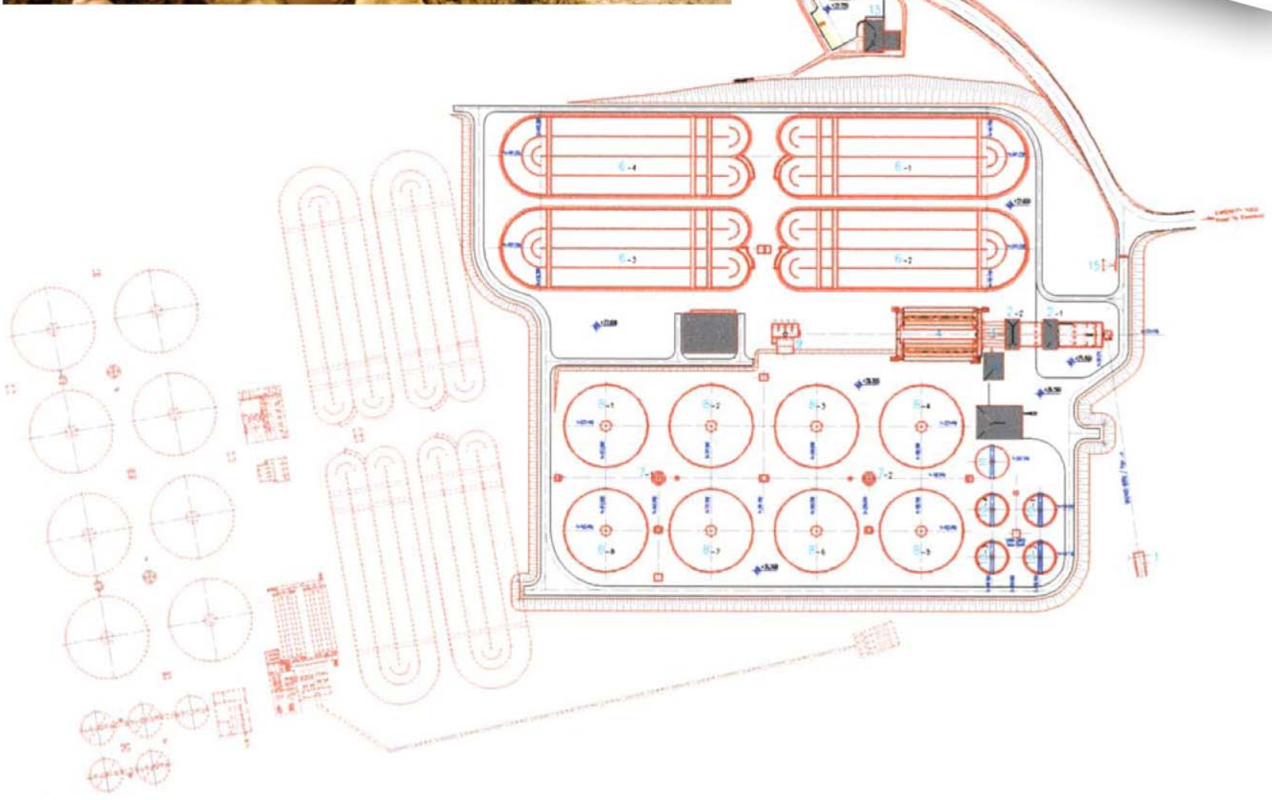
223.800.000.- DM
45.000.000.000.000.- TL

Başkanımız Aziz Duran'ın gayretleriyle proje gerçekleşiyor...

Başkanımız Aziz Duran'ın olağanüstü çabaları sonucu bu dev uluslararası projeyi hayata geçirmek üzere önce devlet planlama teşkilatı (DPT) ve yüksek planlama kurulunun onayı ardından da hazine müsteşarlığından dış kaynaklı kredi izni alınmıştır. ETÜD ve proje çalışmalarına hemen başlanmış, bu çalışmaların nihayetinde Uluslararası bir ihale açılmıştır. İhaleye katılan 6'sı yabancı 11 firma için İçişleri Bakanlığından onay alınmış ve nihayet 4 mart 1996 tarihinde medya vasıtasıyla canlı yayında Adapazarlı'ların huzurunda ihale yapılmıştır. İhale sonucunda İngiliz, Alman ve Türk firmasından oluşan konsorsiyum en uygun teklifi vererek projeyi üstlendi. Bu konsorsiyum Balfour Beatty (İngiliz), Preussag Noell (Alman) ve Metiş (Türk) firmalarından oluşmaktadır.

İhale sonucunda İngiliz, Alman ve Türk firmasından oluşan konsorsiyum en uygun teklifi vererek projeyi üstlendi.

30 Hizmet Dolu Beş Yıl 1994-1999

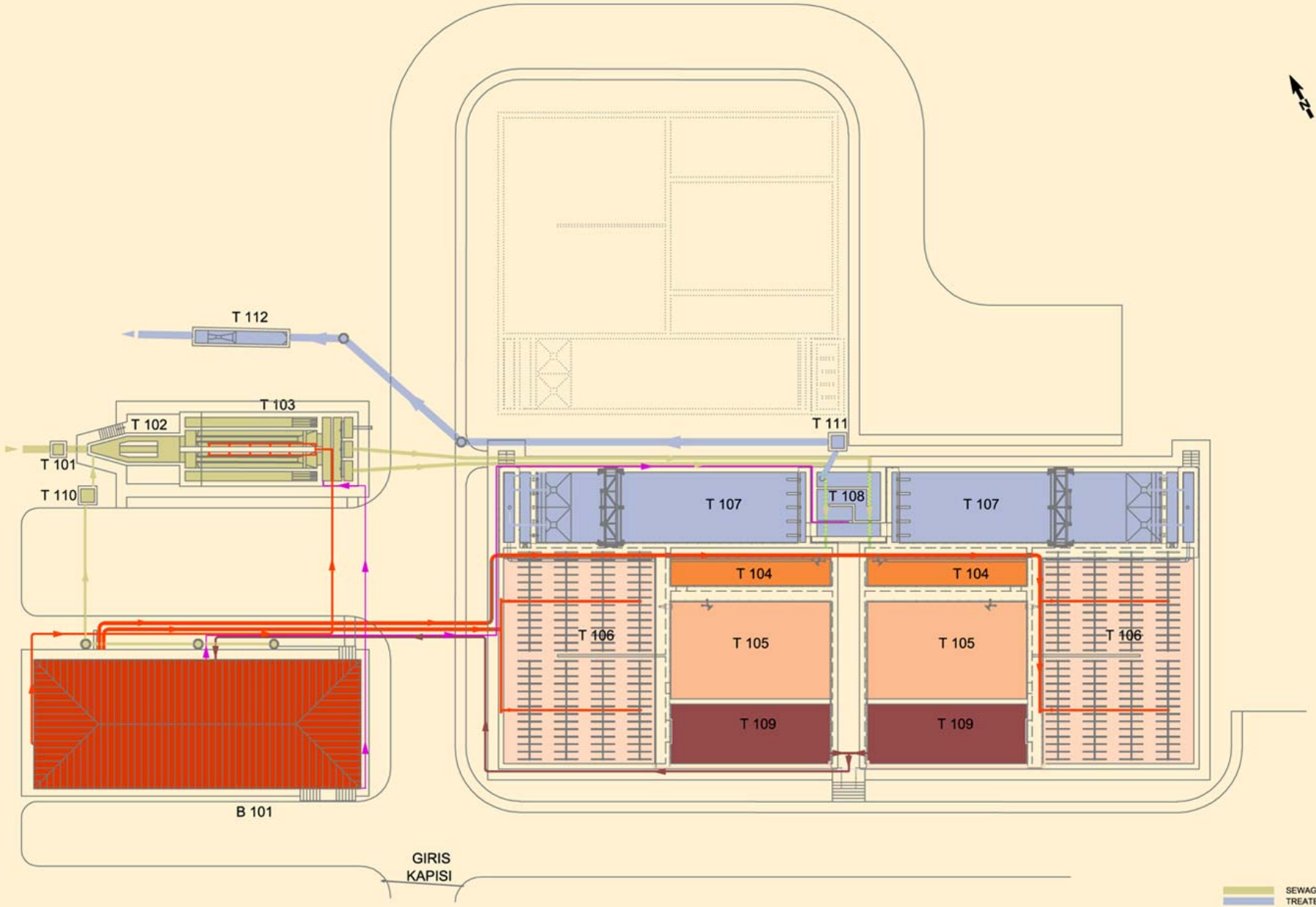


ILICA (ANTALYA) WATER and SEWERAGE PROJECT

This project financed by the World Bank with the guarantee of Turkish Treasurry and Bank of Provinces (İller Bankası) consist of:

- 12.112m HDPE water pipes,
- 18.269m HDPE sanitary sewerage pipes,
- 7.236m concrete storm water pipes,
- 5.000m3 water reservoir,
- 1 no sewerage pumps station,
- 277m forced main.

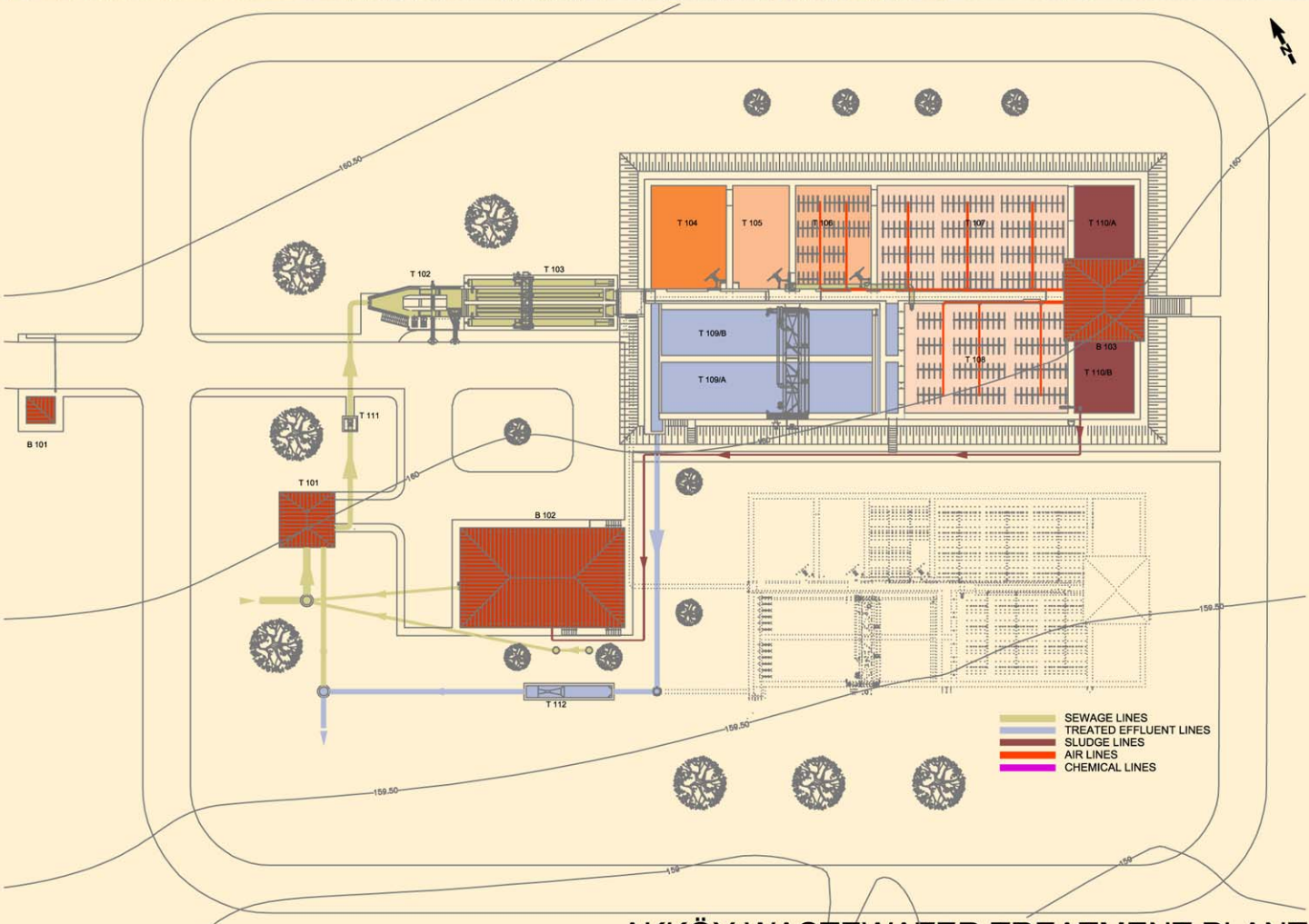
Preparation of tender documents & construction supervision services is given by **EKOTEK** in join vanture with TUMAS and SETAN companies.



AKYAKA WASTEWATER TREATMENT PLANT

NOTATION

T-101 FLOW MEASUREMENT	T-104 ANAEROBIC PHOSPHORUS REMOVAL	T-107 SETTLING TANK	T-110 DRAINAGE PUMP STN.
T-102 SCREEN CHANNEL	T-105 DENITRIFICATION TANK	T-108 CHLORINE CONTACT TANK	T-111 TREATED EFFLUENT CHAMBER
T-103 AERATED GRID CHAMBER	T-106 NITRIFICATION TANK	T-109 SLUDGE THICKENER	T-112 PARSHALL FLUME

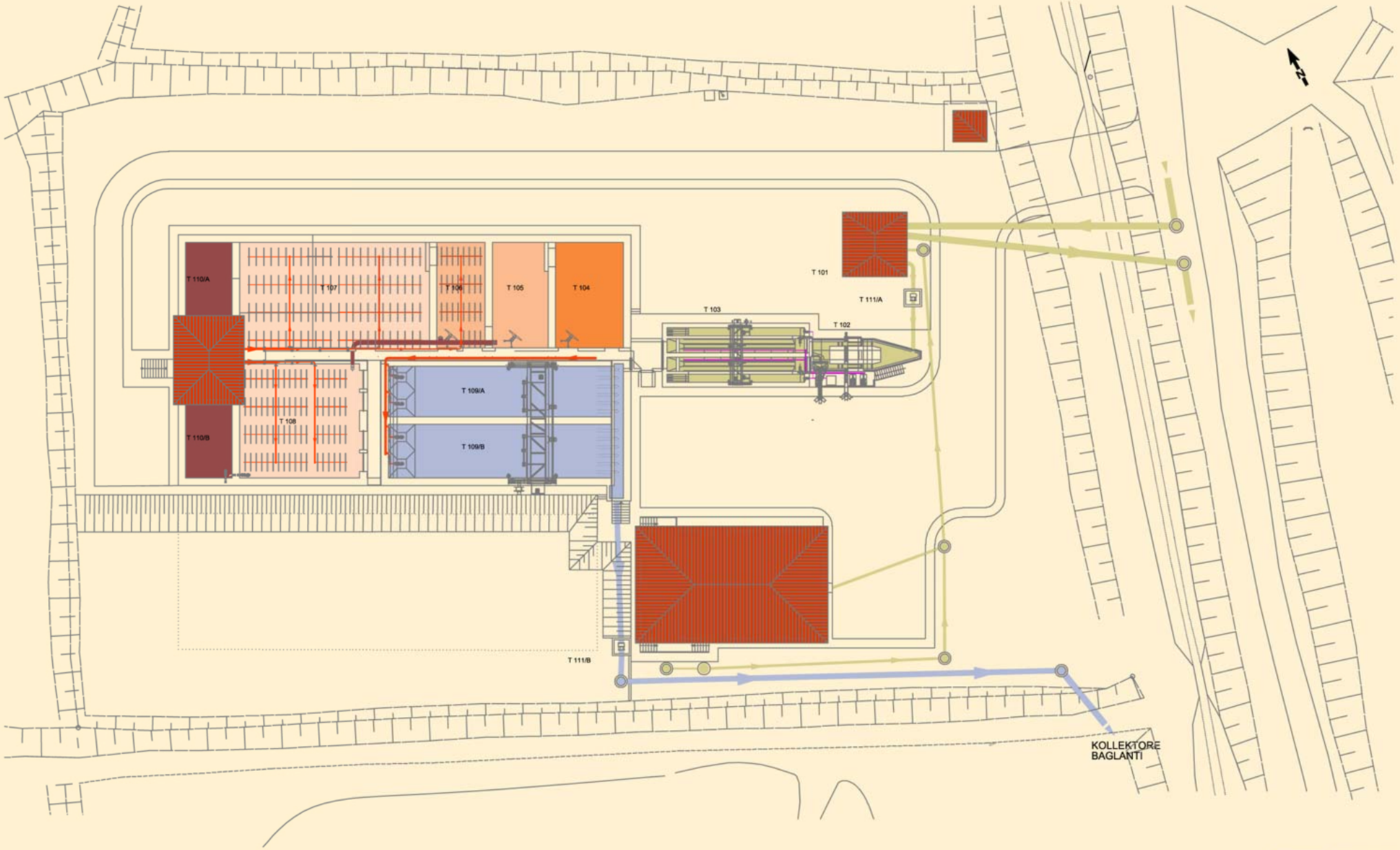


AKKÖY WASTEWATER TREATMENT PLANT

NOTATION

T-101	LIFT STATION	T-109/A-B	CLARIFIERS
T-102	SCREEN CHANNEL	T-110/A-B	SLUDGE STABILIZATION / THICKENING
T-103	GRIT CHAMBER	T-111	FLOW MEASUREMENT AND SAMPLING
T-104	SELECTOR / BIOPHOSPHORUS TANK	T-112	PARSHALL FLUME
T-105	DENITRIFICATION TANK	B-101	GUARD HOUSE
T-106	NITRIFICATION / DENITRIFICATION TANK	B-102	OPERATIONS BUILDING
T-107	NITRIFICATION TANK	B-103	BLOWER HOUSE
T-108	NITRIFICATION TANK		

0m 10m 20m 30m 40m 50m

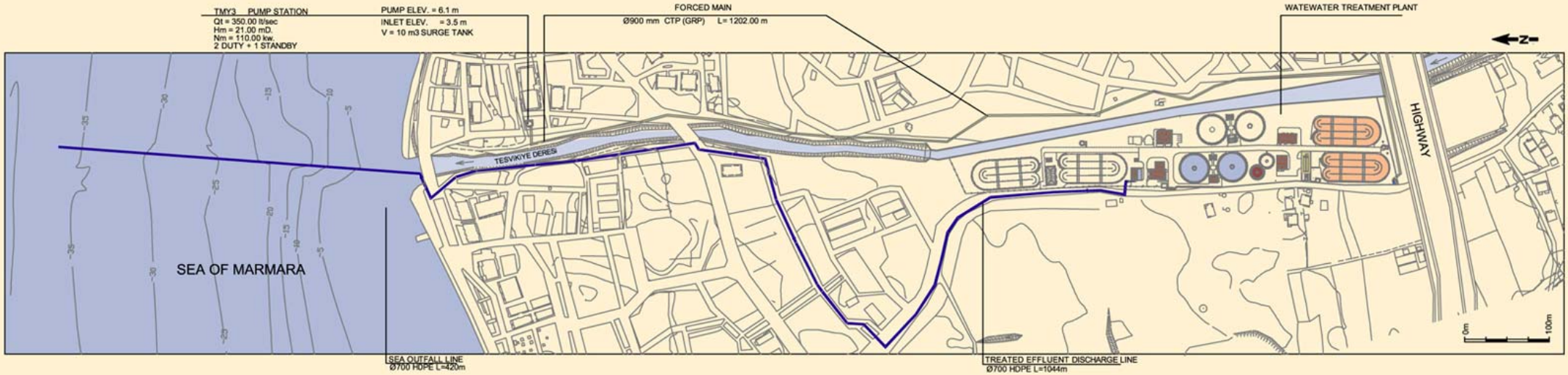


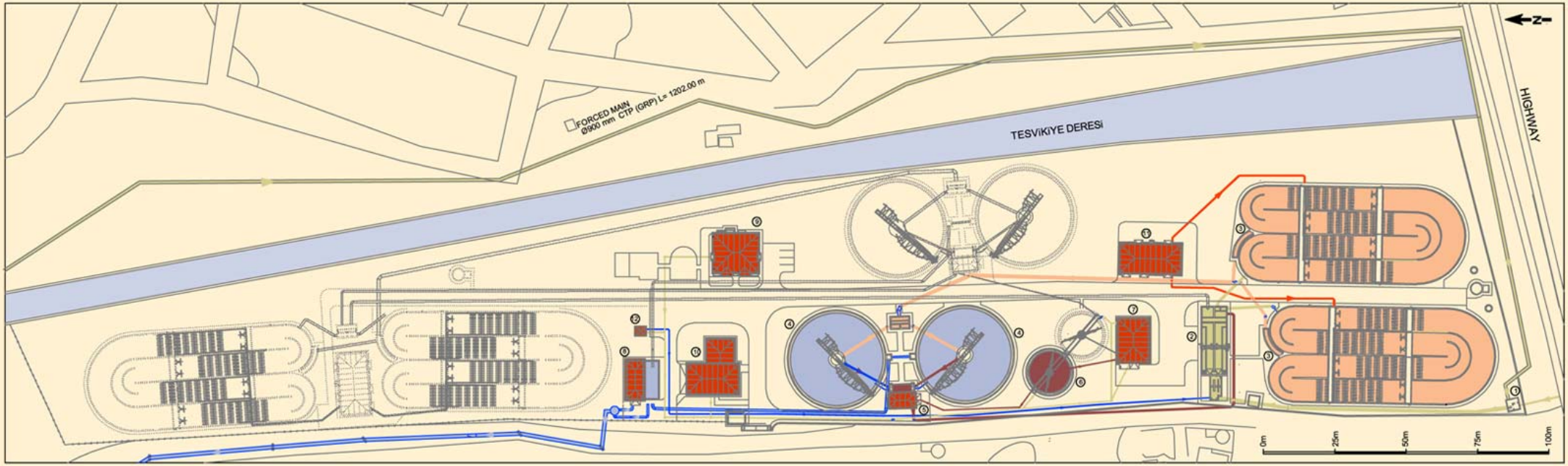
PAMUKKALE WASTEWATER TREATMENT PLANT

NOTATION

T-101 LIFT STATION
T-102 SCREEN CHANNEL
T-103 GRIT CHAMBER
T-104 SELECTOR / BIOPHOSPHORUS TANK
T-105 DENITRIFICATION TANK
T-106 NITRIFICATION / DENITRIFICATION TANK
T-107 NITRIFICATION TANK
T-108 NITRIFICATION TANK
T-109/A-B CLARIFIERS
T-110/A-B SLUDGE STABILIZATION / THICKENING
T-111 FLOW MEASUREMENT AND SAMPLING
B-101 GUARD HOUSE
B-102 OPERATIONS BUILDING
B-103 BLOWER HOUSE

0m 5m 10m 20m 30m



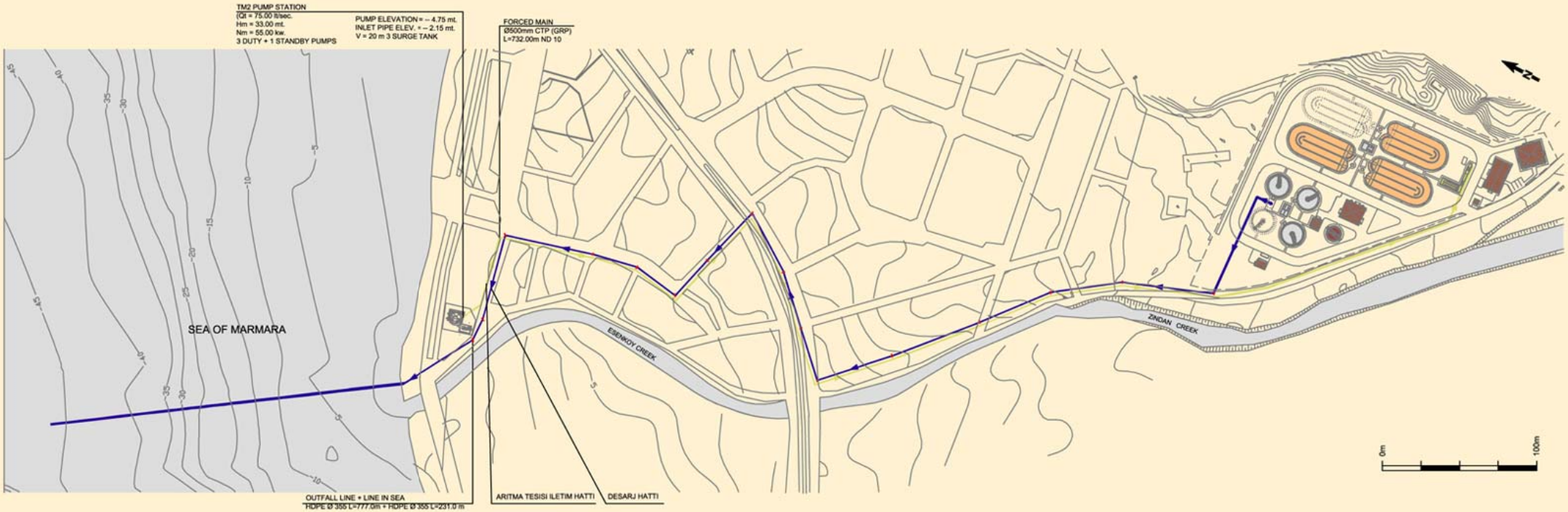


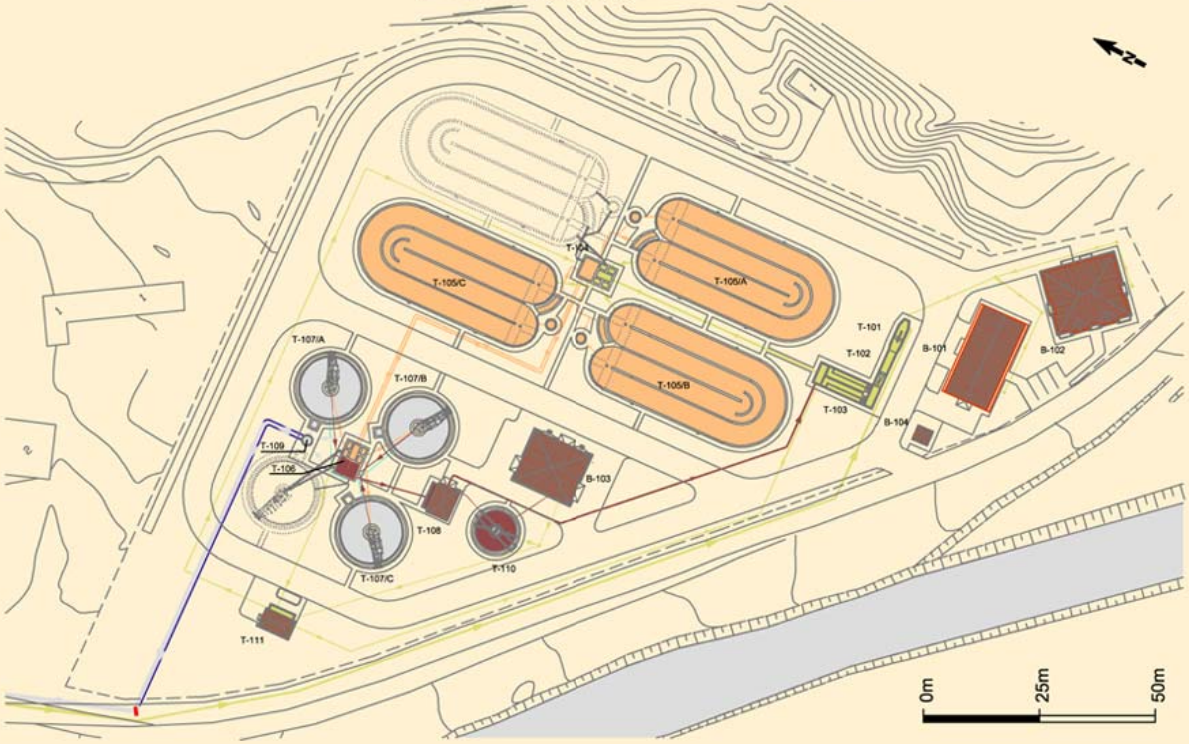
SEWAGE LINES
TREATED EFFLUENT LINES
SLUDGE LINES
AIR LINES
CHEMICAL LINES

NOTATION

1. INLET CHAMBER	4. SEDIMENTATION	7. SLUDGE DEWATERING	10. ADMIN BUILD
2. GRIT GREASE REMOVEL	5. RAS PUMPS	8. TREATED EFFLUMENT DISCHARGE PUMPS	11. BLOWER BUILD
3. AERATIZM	6. SLUDGE THICKENER	9. OPERATORS RESIDENCE	12. PUMP STATION FOR PLANT SEWAGE

ÇINARCIK (YALOVA)
WASTEWATER TREATMENT PLANT AND SEA OUTFALL PROJECT



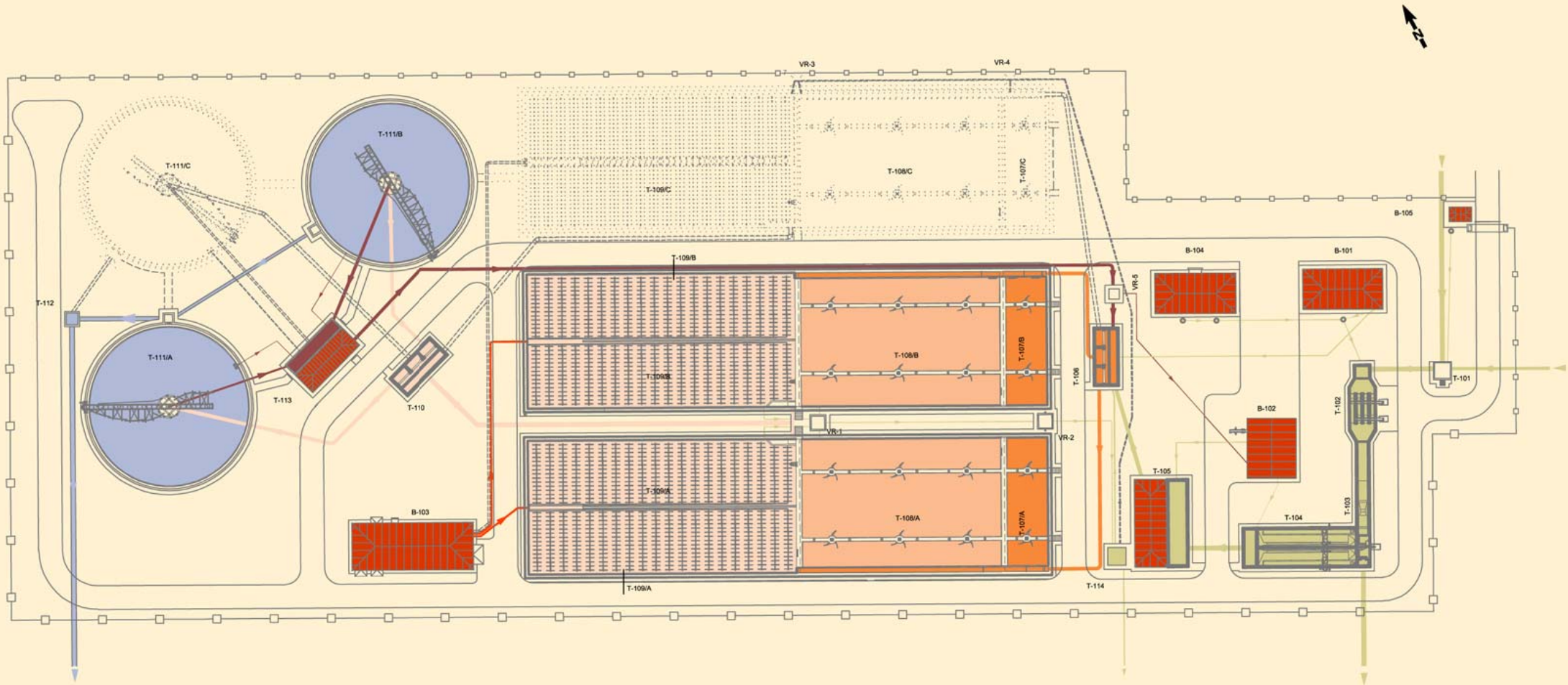


NOTATION

T-101 FINE SCREEN CHANNEL	T-106 FINAL CLARIFIER TANKS DISTRIBUTION STRUCTURE	T-111 DRAINAGE PUMPING STATION
T-102 FLOW MEASUREMENT-PARSHALL PLUME	T-107/A,B,C FINAL CLARIFIER	B-101 ADMINISTRATION BUILDING
T-103 AERATED GRIT CHAMBER	T-108 RETURN SLUDGE PUMPING STATION	B-102 RESIDENCE BUILDING
T-104 AERATION TANKS DISTRIBUTION STRUCTURE	T-109 TREATED WATER COLLECTION PIT	B-103 OPERATION BUILDING
T-105/A,B,C AERATION TANK	T-110 SLUDGE THICKENER	B-104 GUARD BUILDING

SEWAGE LINES
TREATED EFFLUENT LINES
SLUDGE LINES
AIR LINES
CHEMICAL LINES

ESENKÖY (YALOVA)
WASTEWATER TREATMENT PLANT AND SEA OUTFALL PROJECT



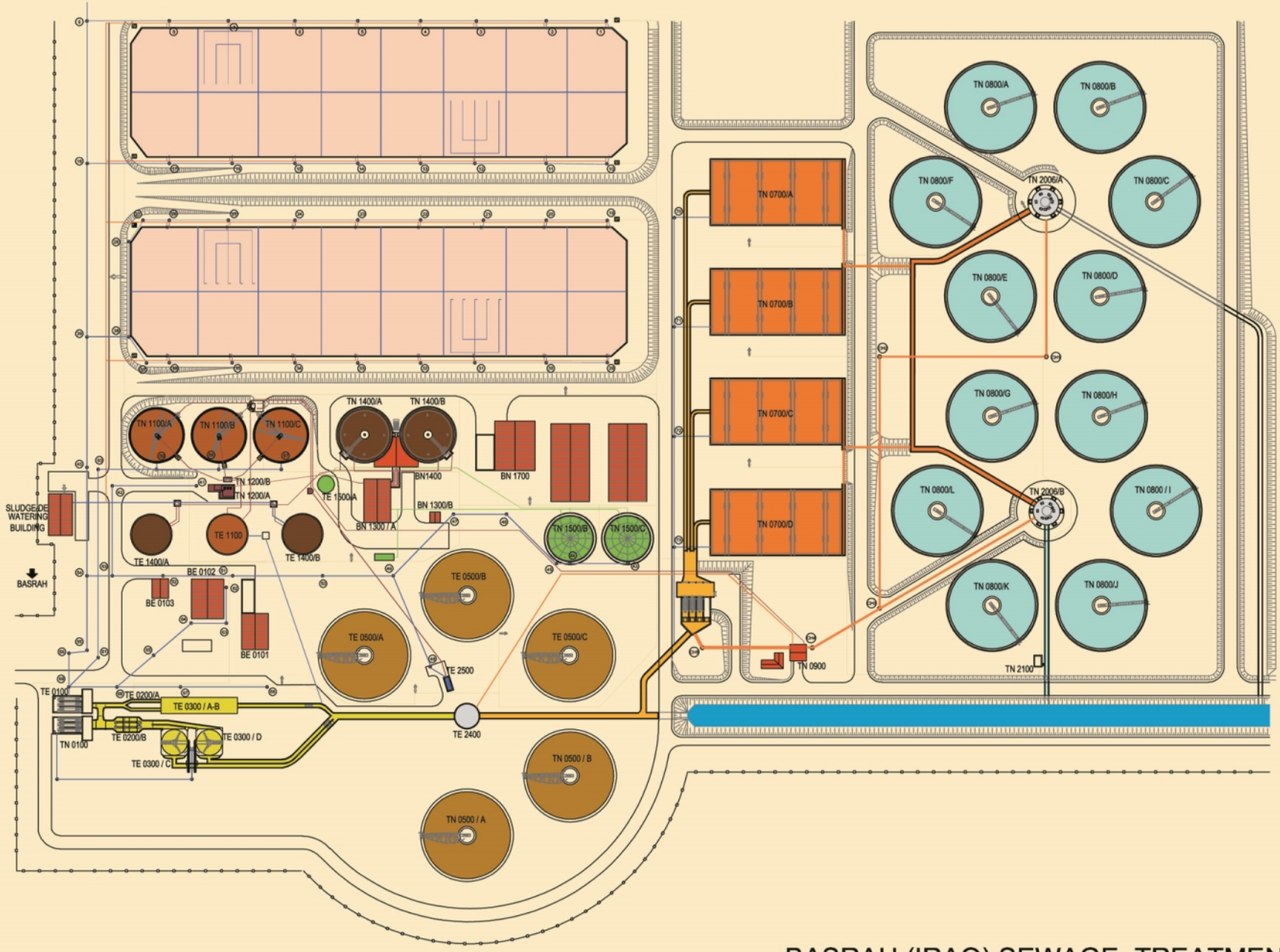
SEWAGE LINES
TREATED EFFLUENT LINES
SLUDGE LINES
AIR LINES
CHEMICAL LINES

AKSARAY WASTEWATER TREATMENT PLANT

NOTATION

T-101 INLET STRUCTURE	T-105 PUMPING STATION	T-109/A-B-C NITRIFICATION TANKS	T-113 RAS PUMPING STATION	B-103 BLOWER AND GENERATOR BUILDING
T-102 SCREEN CHANNEL	T-106 DISTRIBUTION CHAMBER - 1	T-110 DISTRIBUTION CHAMBER - 2	T-114 DRAINAGE PUMPING STATION	B-104 ADMINISTRATION BUILDING
T-103 PARSHALL FLUME	T-107/A-B-C BIOPHOSPHORUS TANKS	T-111/A-B-C SEDIMENTATION TANKS	B-101 WORKSHOP AND CHEMICAL BUILDING	B-105 GUARD HOUSE
T-104 AERATED GRIT AND GREASE CHAMBER	T-108/A-B-C DENITRIFICATION TANKS	T-112 TREATED WATER COLLECTION CHAMBER	B-102 SLUDGE DAWATERING BUILDING	VR-1,2,3,4,5 VALVE CHAMBERS

0m 25m 50m 75m 100m



Basra is the second largest city of Iraq with an approximate population of 1.5 million. However this phase of the treatment plant is designed for a population of 700.000 because not all parts of the city is connected to sewerage.

The tender for electrical and mechanical equipment supply was made within the scope of "FOOD FOR PETROL" Project and the job was awarded to YEDAS Company.

EKOTEK performed the following service to main contractor YEDAS.

1. Preparing the as built drawings of the first phase (existing) and second phase units.

2. Modifications and revisions required for the compatibility with the equipment ordered.

3.Mechanical design and installation drawings.

4. Manufacture and supply of the following mechanical equipment.

- Scrapers for primary sed. tanks. (Ø40m) 2 no.s.
- Scrapers for secondary sed. tanks. (Ø40m) 12 no.s.
- Scrapers for sludge thickeners. (Ø19m) 3 no.s.
- Surface aerators (37 kW) 32 no.s.
- Motor actuated level control weirs. 32 no.s.

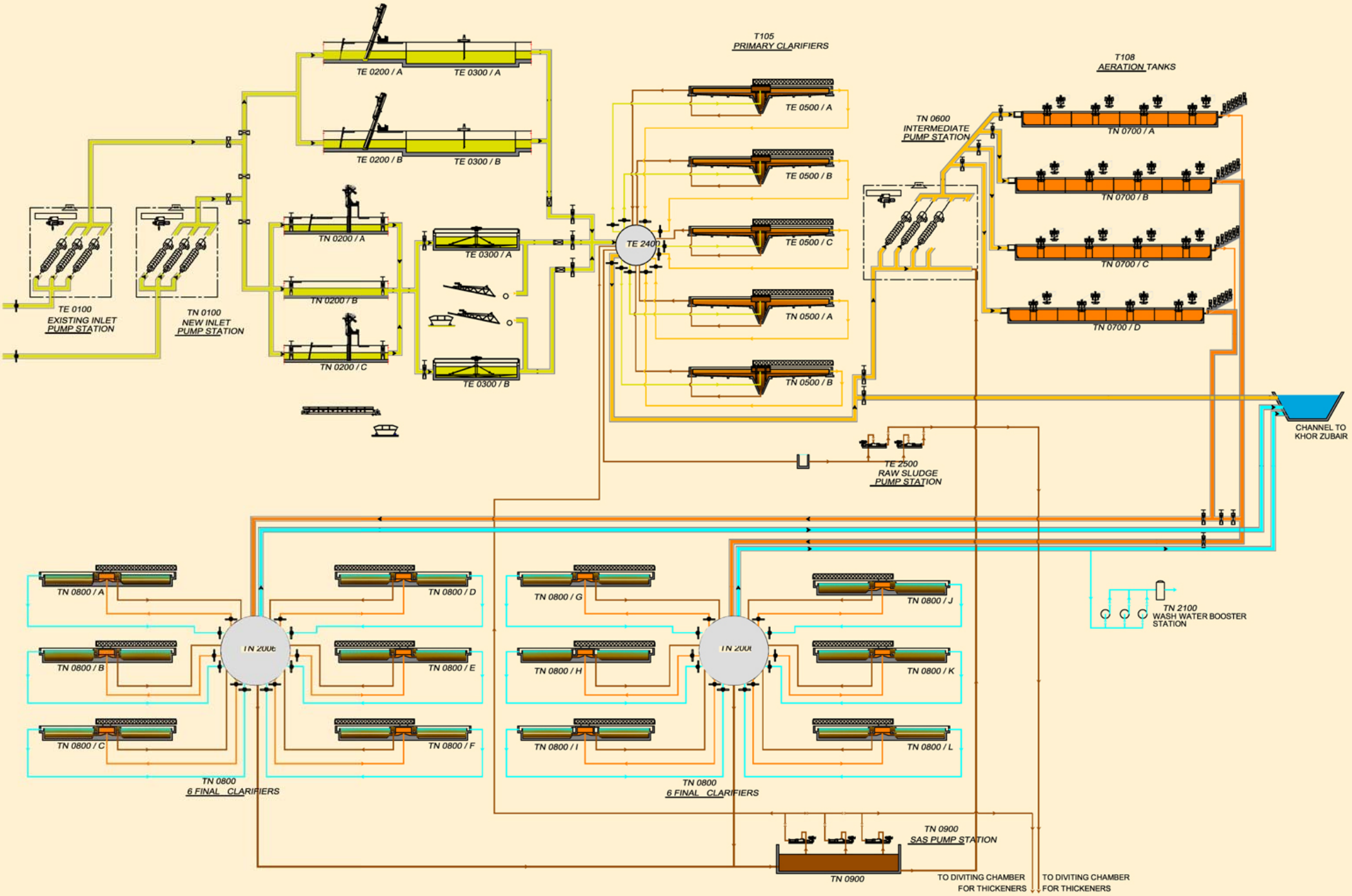
SEWAGE LINES
TREATED EFFLUENT LINES
SLUDGE LINES
AIR LINES
CHEMICAL LINES

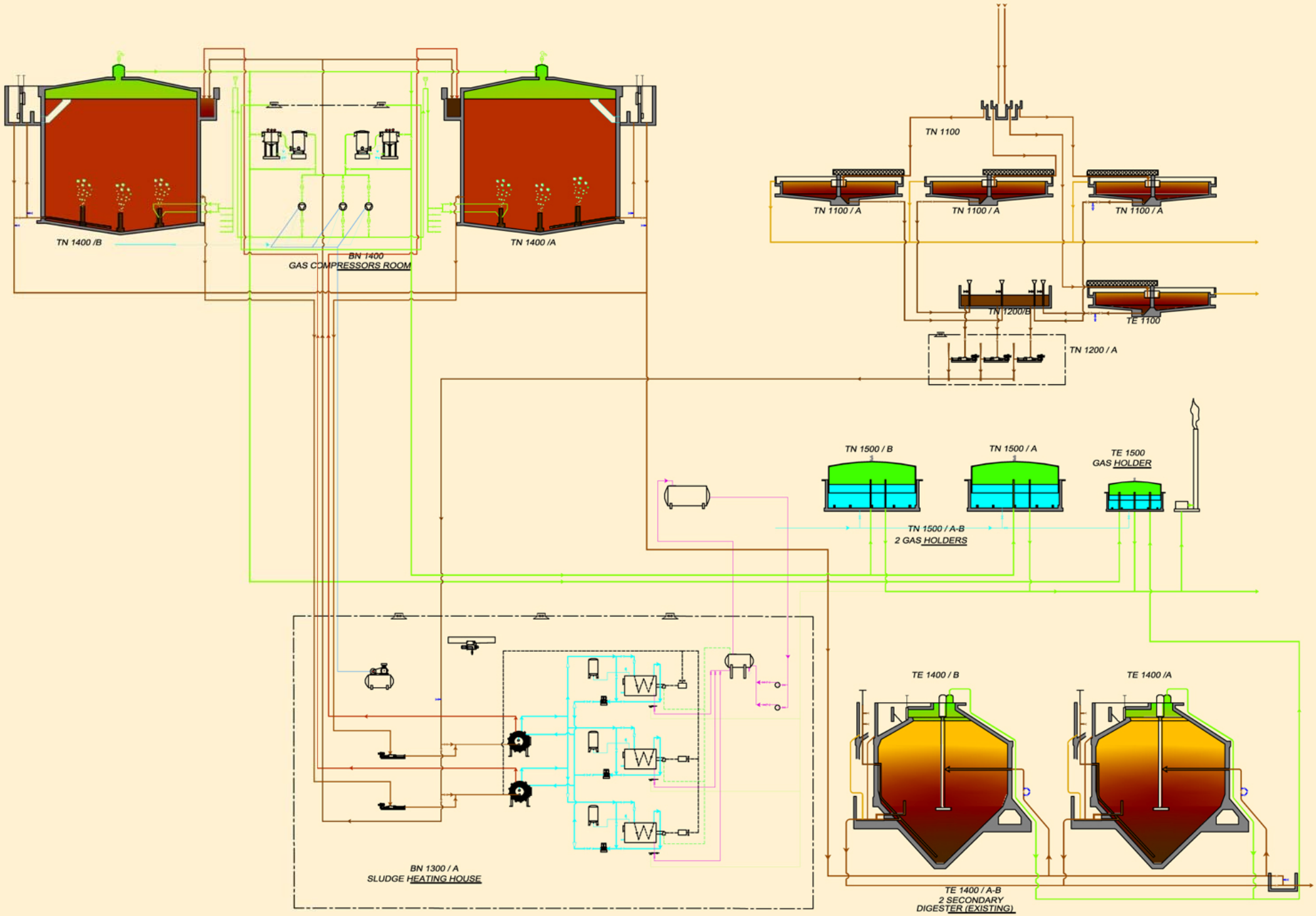
BASRAH (IRAQ) SEWAGE TREATMENT PROJECT (2004)

NOTATION

BN 1300 / A	SLUDGE HEATING PLANT	BN 1800 /A-B-C	TRANSFORMER BUILDING	TE 2400	PRIMARY SED. TANKS DIST./	TN 0700 / A-B-C-D	AERATION TANKS	TN 1200 / B	TELESCOPIC VALVES CHAMBER
BN 1300 / B	OIL STORAGE ROOM	TE 0100	INLET PUMP STATION (EXISTING)	TE 0400	VENTURI FLUME (EXISTING)	TN 2006	FINAL CLAR. DIST./ COLL. CHAMBER	TN 1200 / A	DIGESTER FEED PUMP STATION
BN 1400	GAS COMPRESSORS ROOM	TN 0100	INLET PUMP STATION (NEW)	TN 0400 / A-B	VENTURI FLUME (NEW)	TN 0800 / A....L	FINAL CLARIFIERS	TN 1400 / A-B	PRIMARY DIGESTERS
BN 1700	POWER BUILDING	TE 0200 /A-B	SCREENS CHAMBER (EXISTING)	TE 0500 / A-B-C	PRIMARY SED. TANKS (EXISTING)	TN 0900	SAS RETURN PUMP STATION	TE1400 / A-B	SECONDARY DIGESTERS (EXISTING)
BE 0101	ADMINISTRATION BUILDING	TN 0200 /A-B-C	SCREENS CHAMBER (NEW)	TN 0500 / A-B	PRIMARY SED. TANKS (NEW)	TN 2100	WASHWATER BOOSTER STATION	TE 1500	GAS HOLDER TANK (EXISTING)
BE 0102	MAINTENANCE BUILDING	TE 0300 /A-B	SANDTRAP (EXISTING)	TE 2500	PRIM. SLUDGE PUMP STATION (EX.)	TN 1100 / A-B-C	SLUDGE THICKENERS (NEW)	TN 1500 / A-B	GAS HOLDER TANK (NEW)
BE 0103	GENERATOR BUILDING	TN 0300 / A-B	SANDTRAP (DETRITOR) (NEW)	TN 0600	INTERMEDIATE PUMP STATION	TE 1100	SLUDGE THICKENERS (EXISTING)	TN 1600	GAS FLARE

0m 10m 20m 30m 40m 50m


TE 0200 / A
TE 0300 / A
TE 0200 / B
TE 0300 / B
TN 0200 / A
TE 0300 / A
TN 0200 / B
TN 0200 / C
TE 0300 / B
TE 0100
EXISTING INLET
PUMP STATION
TN 0100
NEW INLET
PUMP STATION
T105
PRIMARY CLARIFIERS
TE 0500 / A
TE 0500 / B
TE 0500 / C
TN 0500 / A
TN 0500 / B
TE 2400
TN 0600
INTERMEDIATE
PUMP STATION
T108
AERATION TANKS
TN 0700 / A
TN 0700 / B
TN 0700 / C
TN 0700 / D
CHANNEL TO
KHOR ZUBAIR
TE 2500
RAW SLUDGE
PUMP STATION
TN 0800 / A
TN 0800 / D
TN 0800 / B
TN 0800 / E
TN 0800 / C
TN 0800 / F
TN 2006
TN 0800
6 FINAL CLARIFIERS
TN 0800 / G
TN 0800 / J
TN 0800 / H
TN 0800 / K
TN 0800 / I
TN 0800 / L
TN 2001
TN 0800
6 FINAL CLARIFIERS
TN 2100
WASH WATER BOOSTER
STATION
TN 0900
SAS PUMP STATION
TN 0900
TO DIVITING CHAMBER
FOR THICKENERS
TO DIVITING CHAMBER
FOR THICKENERS



BASRAH SEWAGE TREATMENT PLANTS FLOW CHART

BURSA WASTEWATER TREATMENT PLANTS

The construction is done by the Joint venture of SistemYapı(Turkish)-EMIT(Italian)-OTV(French) and YUKSEL PROJE INTERNATIONAL (Turkish) gave consultancy and construction supervision services to BUSKI (Bursa water & sewerage authority).

EKOTEK gave approximately 40 man-months of experts service to the consultant for:

- Study and approval of process design
- Study and approval of mechanical designs.
- Witnessing the factory tests of some mechanical equipment.

BURSA EAST WASTEWATER TREATMENT PLANT

Advanced biological treatment (nitrogen and phosphorus removal)

Capacity : 1.550.000 Equivalent population
: 240.000 m3/day (first phase - 2017)
: 320.000 m3/day (second phase - 2030)

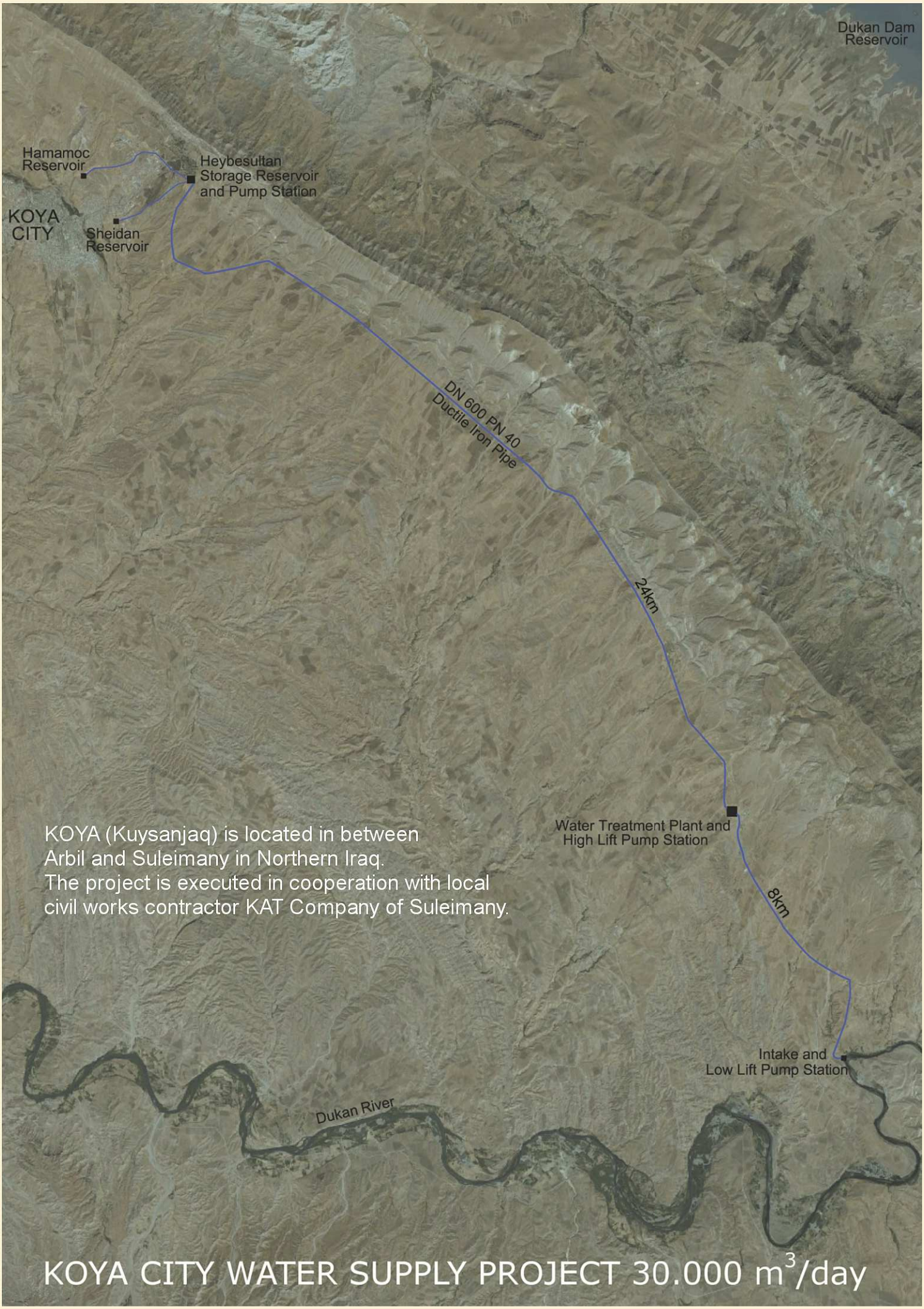
BURSA WEST WASTEWATER TREATMENT PLANT

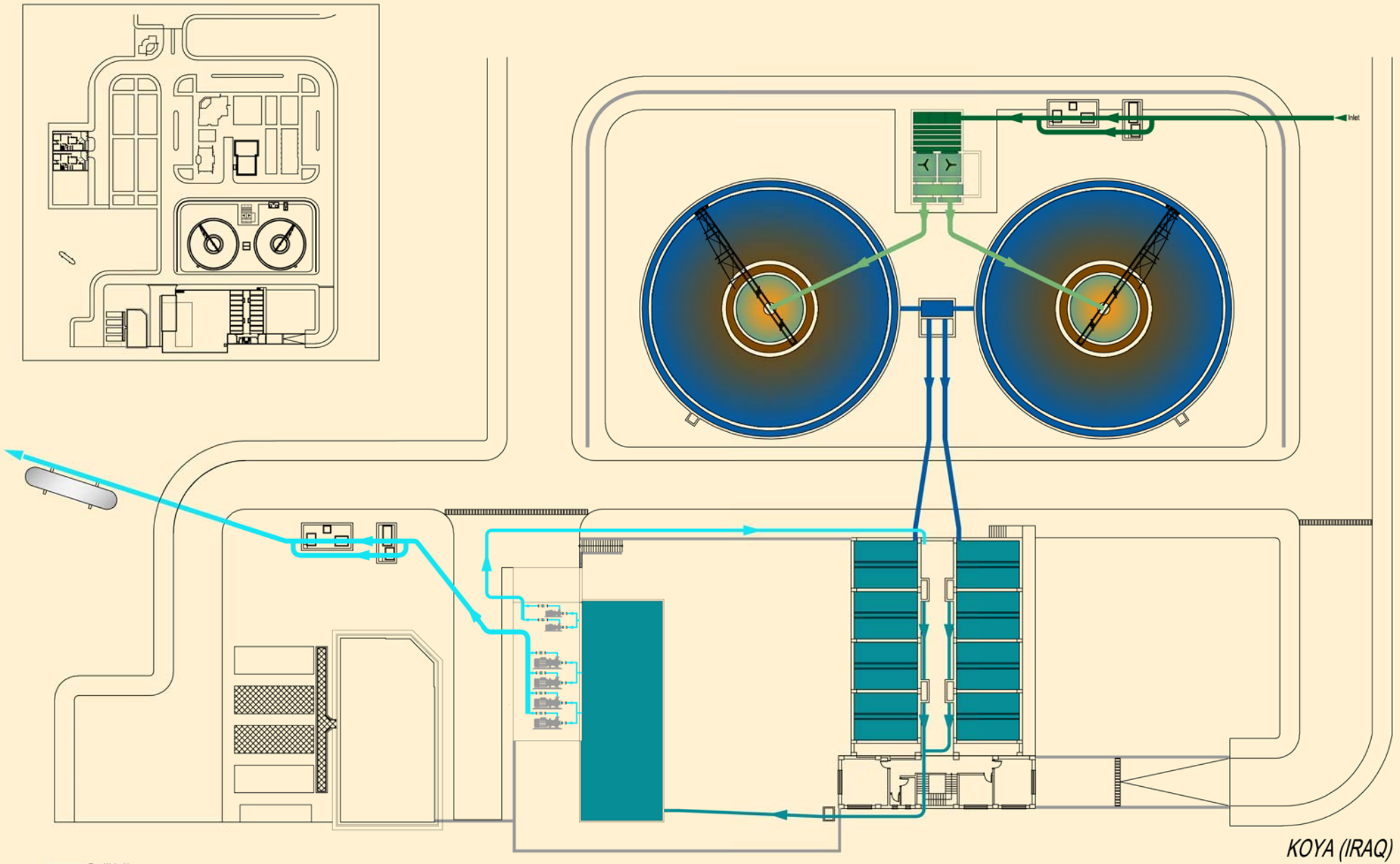
Advanced biological treatment (nitrogen and phosphorus removal)

Capacity : 650.000 Equivalent population
: 87.500 m3/day (first phase - 2017)
: 175.000 m3/day (second phase - 2030)

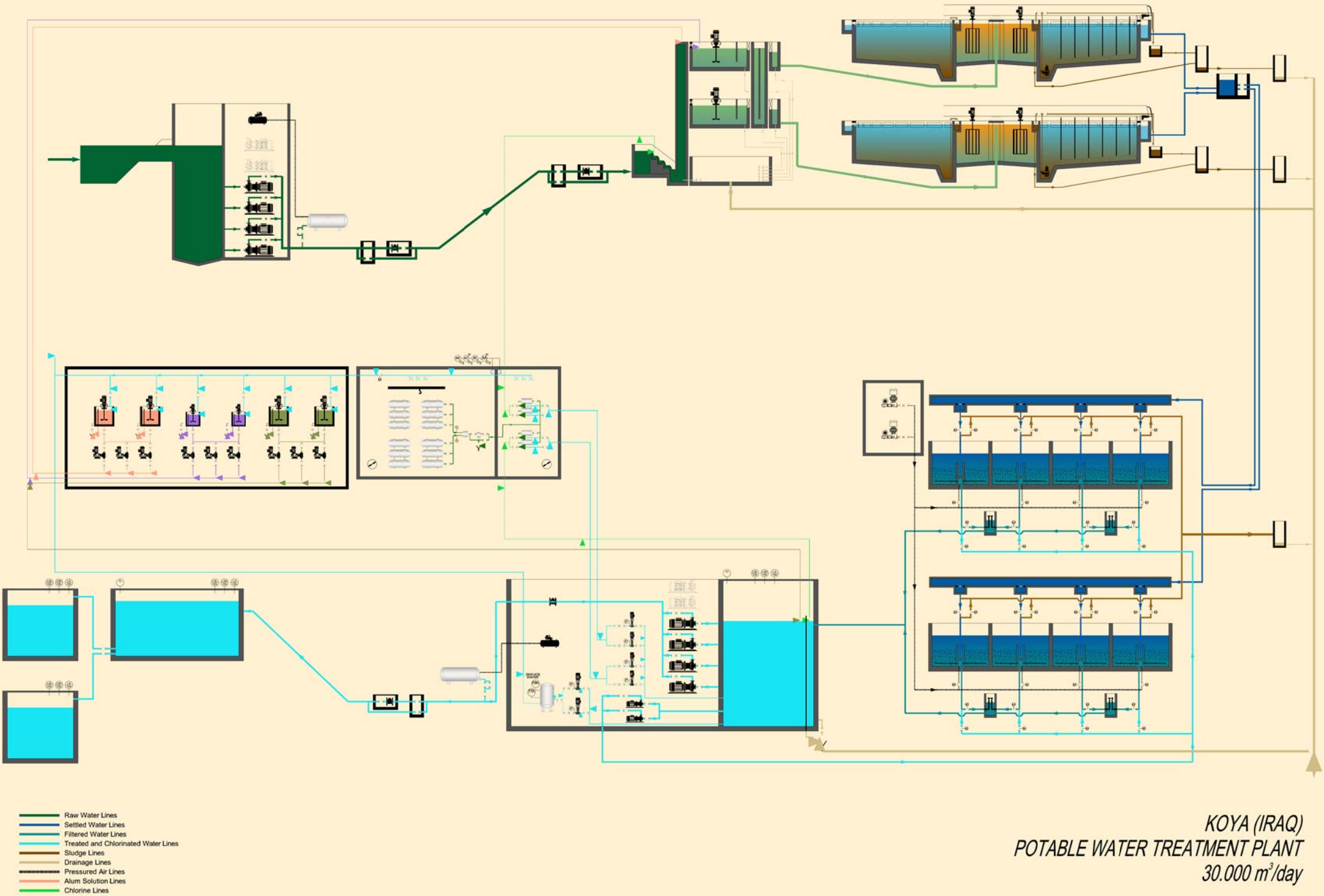
HAMITLER LEACHATE TREATMENT PLANT

Treats the leachate with a very high concentration of pollution resulting from the solid waste land fill area. The total capacity of the landfill is 25 million tons. The treated effluent is conveyed to East WWTP for further treatment.

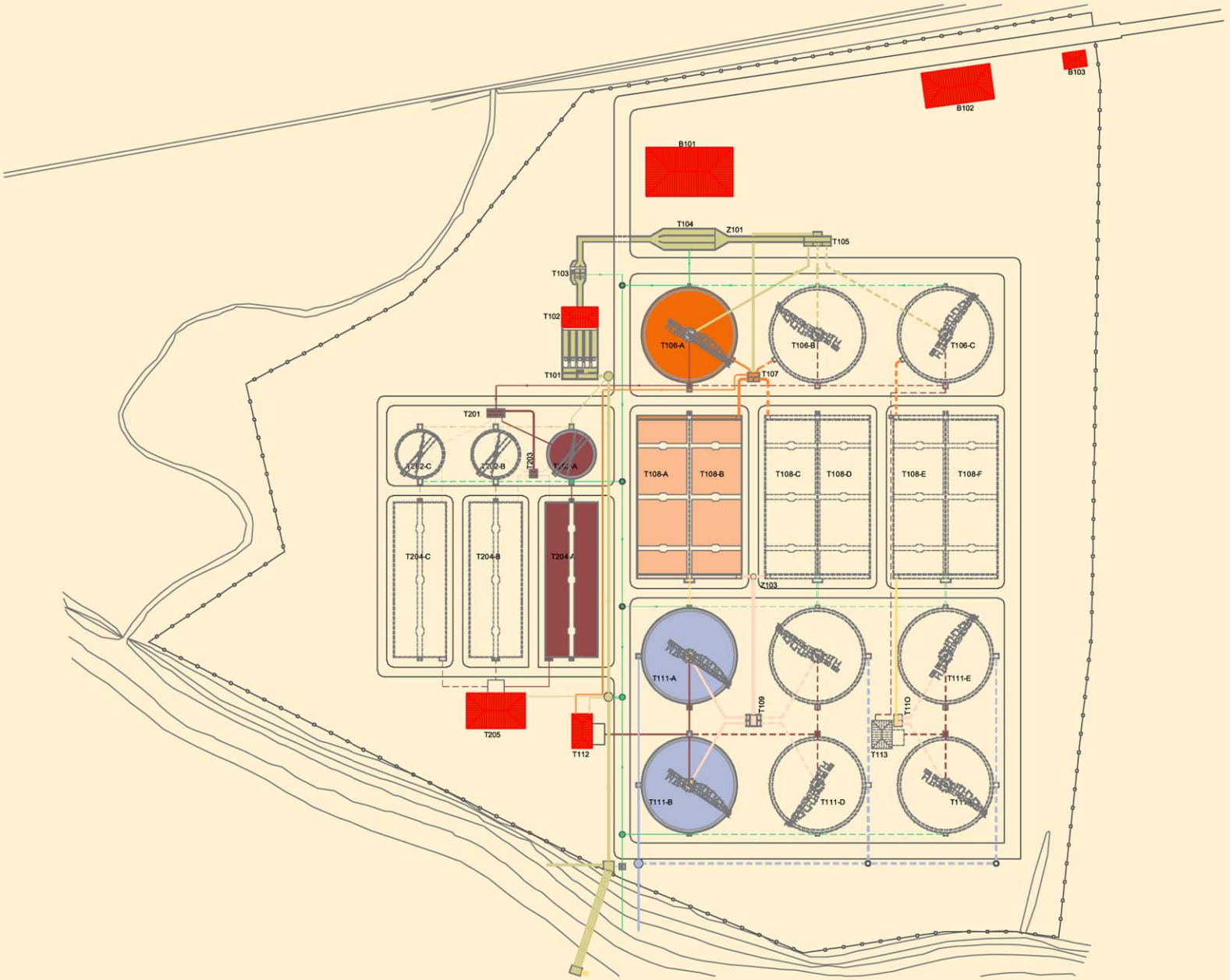

Dukan Dam
Reservoir
Hamamoc
Reservoir
Heybesultan
Storage Reservoir
and Pump Station
KOYA
CITY
Sheidan
Reservoir
DN 600 PN 40
Ductile Iron Pipe
24km
Water Treatment Plant and
High Lift Pump Station
8km
Intake and
Low Lift Pump Station
Dukan River
KOYA (Kuysanjaq) is located in between
Arbil and Suleimany in Northern Iraq.
The project is executed in cooperation with local
civil works contractor KAT Company of Suleimany.
KOYA CITY WATER SUPPLY PROJECT 30.000 m3/day



KOYA (IRAQ)
POTABLE WATER TREATMENT PLANT
30.000 m^3/day
LAYOUT



KOYA (IRAQ)
POTABLE WATER TREATMENT PLANT
30.000 m^3/day



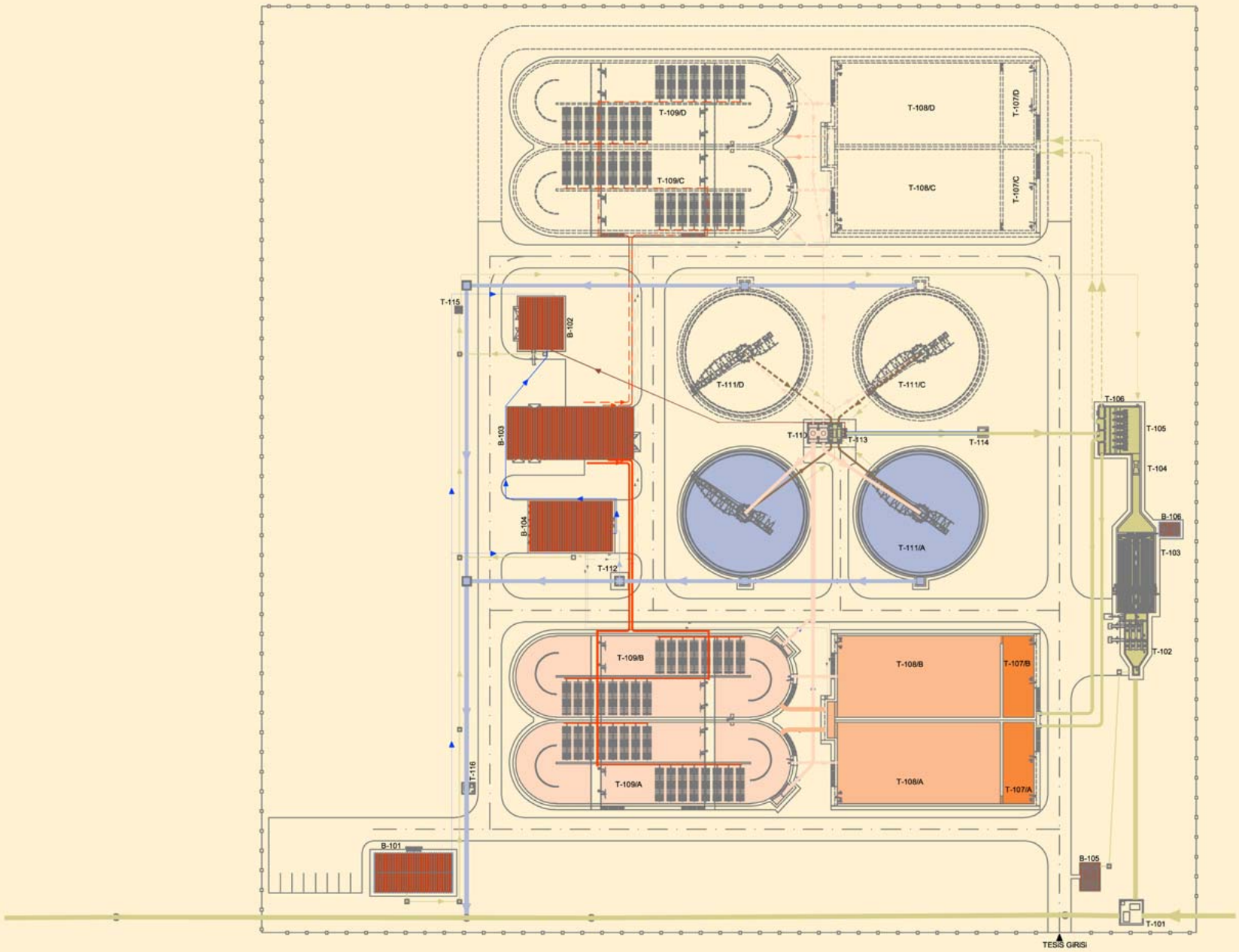
SEWAGE LINES
TREATED EFFLUENT LINES
SLUDGE LINES
AIR LINES
CHEMICAL LINES

ÇERKEZKÖY WASTEWATER TREATMENT PLANT

NOTATION

T101 KABA IZGARA	T105 PARSHALL SAVAĞI	T109 HAVALANDIRMA HAVUZLARI	T113 GERİ DEVİR TERFİ MERKEZİ - 1	T117 DAĞITIM YAPISI - 6	B103 BEKÇİ KULÜBESİ	Z103 TOPLAMA- DAĞITMA RÖGARI
T102 ANA TERFİ MERKEZİ	T106 DAĞITIM YAPISI - 1	T110 DAĞITIM YAPISI - 3	T114 GERİ DEVİR TERFİ MERKEZİ - 2	T118 ÇAMUR AYRIŞTIRICILAR	B104 BELT FİLTRE BİNASI	Z104 TAHLİYE RÖGARI
T103 İNCE IZGARA	T107 ÇÖKELTME HAVUZU	T111 DAĞITIM YAPISI - 4	T115 DAĞITIM YAPISI - 5	B101 ÇÖKELTME BİNASI	Z101 GİRİŞ YAPISI - 1	
T104 KUM TUTUCU	T108 DAĞITIM YAPISI - 2	T112 SON ÇÖKELTME HAVUZLARI	T116 YOĞUNLAŞTIRMA HAVUZLARI	B102 İDARE BİNASI	Z102 GİRİŞ YAPISI - 2	

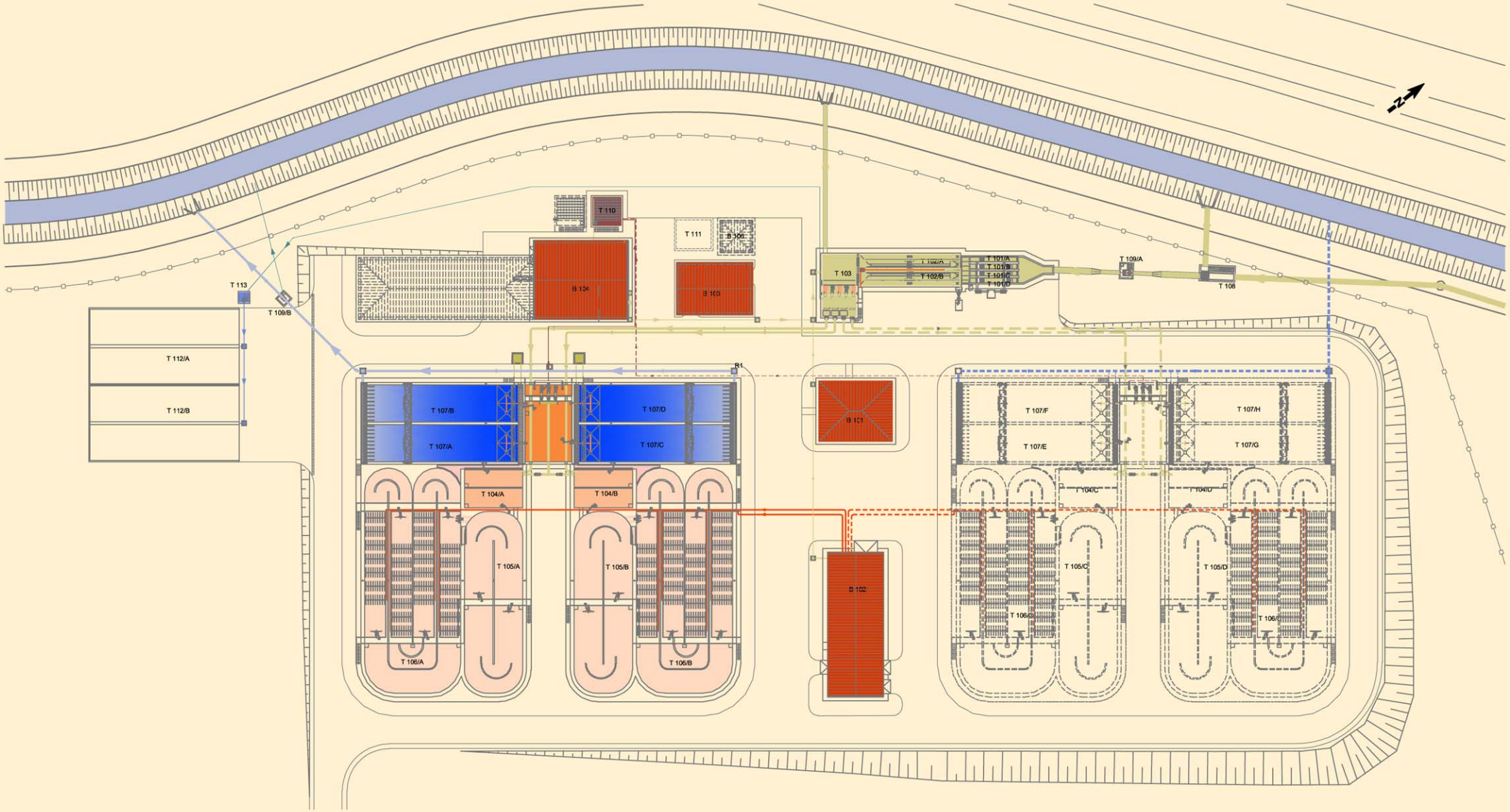
0m 10m 20m 30m 40m 50m



ELBİSTAN (K.MARAS) WASTEWATER TREATMENT PLANT

NOTATION

T-101 INLET STRUCTURE
T-102 SCREENS CHANNEL
T-103 AERATED GRIT AND GREASE CHAMBER
T-104 PARSHALL FLUME
T-105 PUMP STATION
T-106 DISTRIBUTION STRUCTURE - 1
T-107/A-B-C-D BIOPHOSPHORUS TANKS
T-108/A-B-C-D DENITRIFICATION TANKS
T-109/A-B-C-D NITRIFICATION TANKS
T-110 DISTRIBUTION STRUCTURE - 2
T-111/A-B-C-D SETTLING TANKS
T-112 TREATED WATER COLLECTION
T-113 RAS PUMP STATION
T-114 FLOWMETER
T-115 DRAINAGE PUMP STATION
B-101 ADMINISTRATION BUILDING
B-102 SLUDGE DEWATERING BUILDING
B-103 BLOWER AND TRANSFORMER/GENERATOR BUILDING
B-104 WORK SHOP AND CHEMICALS BUILDING
B-105 GUARD HOUSE
B-106 GRIT CHAMBER BLOWERS BUILDING



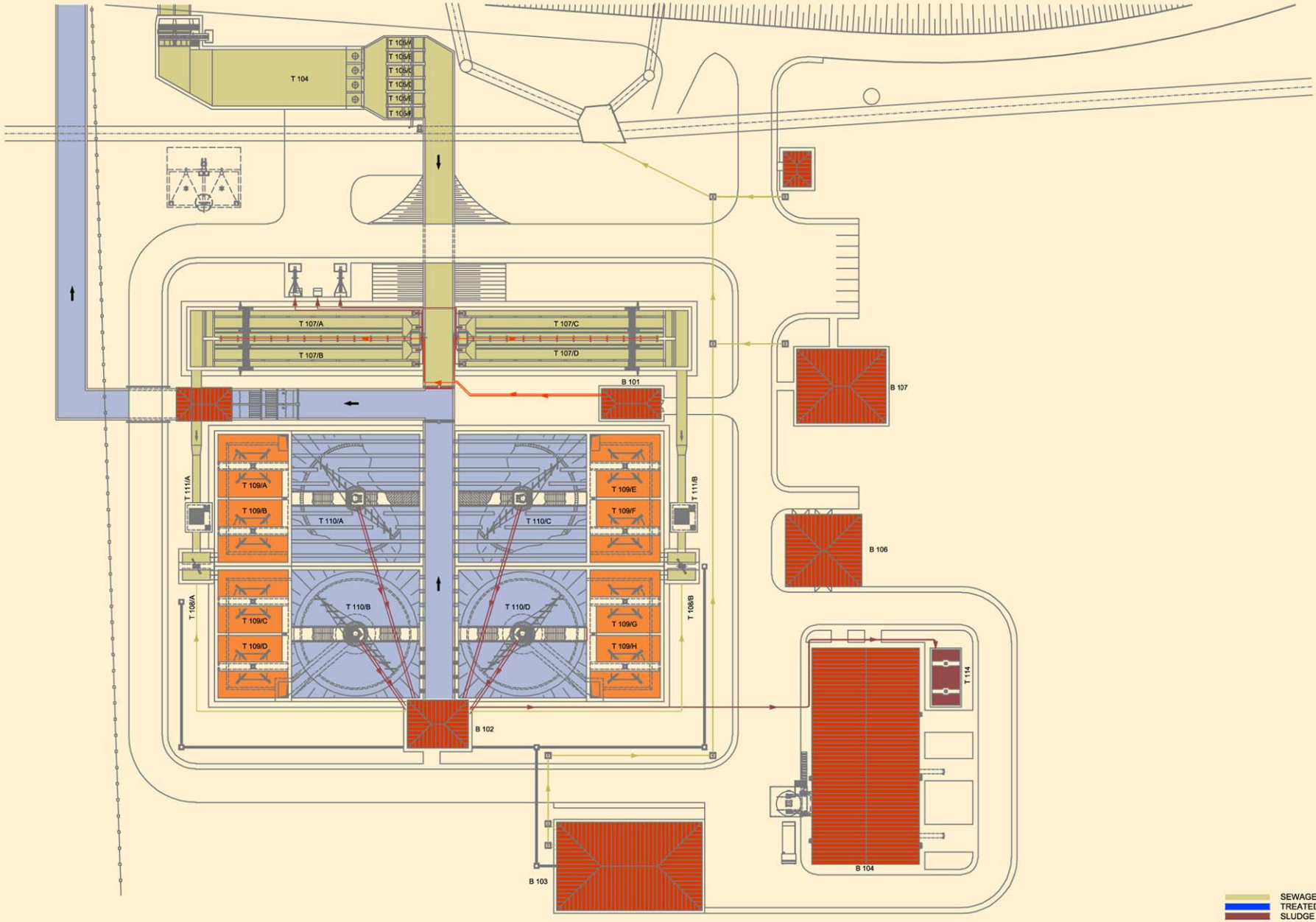
SEWAGE LINES
TREATED EFFLUENT LINES
SLUDGE LINES
AIR LINES

HASANOGLAN WASTEWATER TREATMENT PLANT

0m 25m 50m 75m 100m

NOTATION

T 101/A-B-C SCREEN CHANNEL
T 102/A-B AERATED GRIT & GREASE REMOVAL
T 103 LIFT STATION AND FLOW SPLITHING
T 104/A-B-C-D BIOPHOSPHORAL TANKS
T 105/A-B-C-D DENITRIFICATION TANKS
T 106/A-B-C-D NITRIFICATION TANKS
T 107/A-B-C-D-E-F-G-H SETTLING TANKS
T 108 BY-PASS STRUCTURE
T 109/A-B FLOWMETER
T 110 SLUDGE TANK
T 111 TREATED WATER TANK
T 112/A-B DEWATERED & DRIED SLUDGE STORAGE
T 113 DRAINAGE PUMP STATION
B 101 ADMINISTARION BUILDING
B 102 BLOWERS BUILDING
B 103 WORKSHOP & CHEMICAL BUILDING
B 104 SLUDGE DEWATERING & DRYING
B 106 SERVICE WATER FILTRATION & DISINFECTION



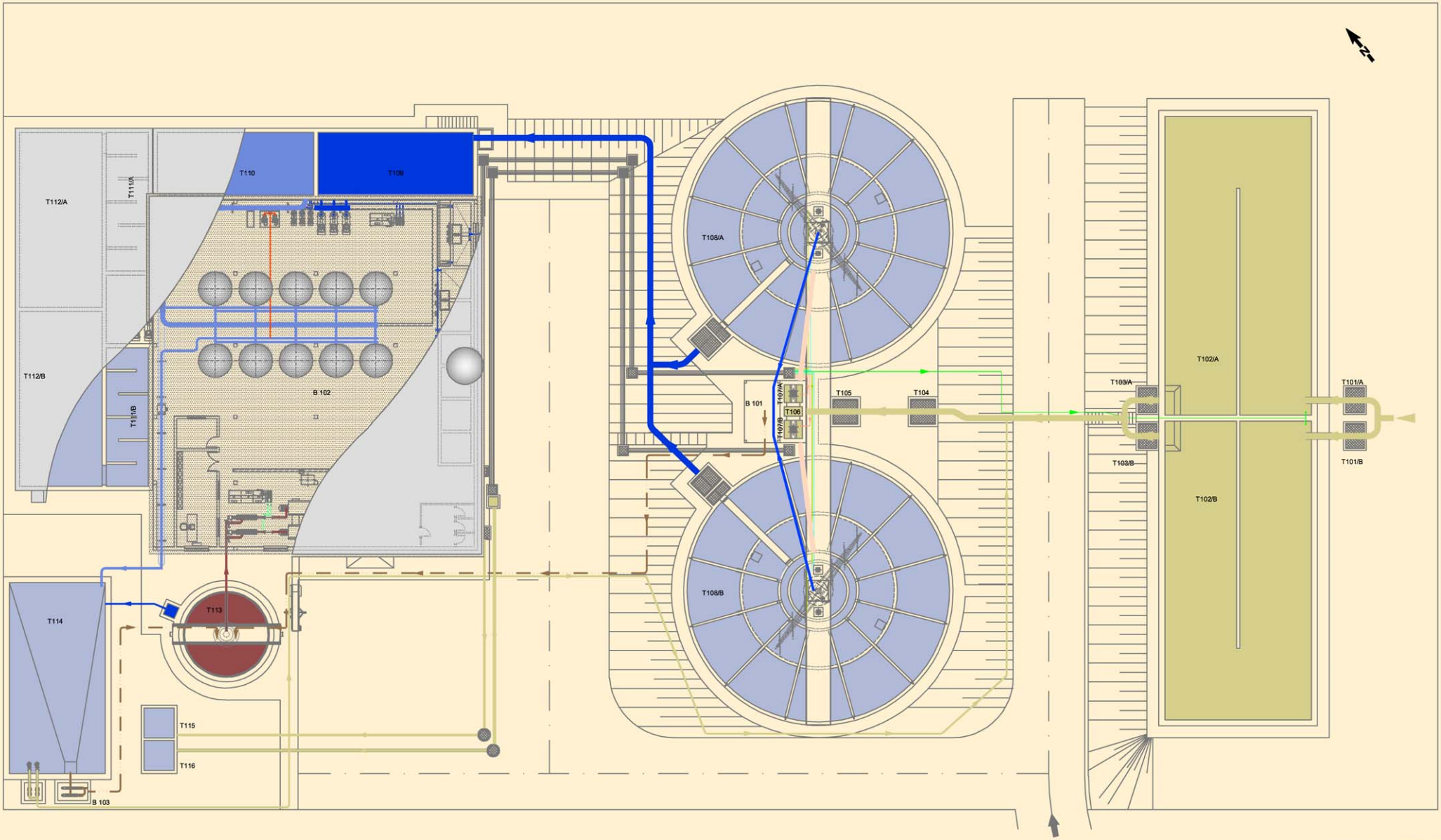
SEWAGE LINES
TREATED EFFLUENT LINES
SLUDGE LINES
AIR LINES

ANKARA CREEK TREATMENT PLANT

NOTATION

T101	INTAKE STRUCTURE	T105/A-..-F	FINE SCREEN	T109/A-..-H	FLOCCULATION TANKS	T114	SLUDGE THICKENER	B 103	CHEMICALS BUILDING
T103/A-B	COARSE SCREENS	T107/A-..-F	AERATED GREASE & GRIT CHANNELS	T110/A-..-D	LAMELLA SEDIMENTATION TANKS	B101	GRIT CHANNEL BLOWERS	B 104	SLUDGE PUMP STATION
T104	LIFT STATION	T108/A-B	FLASHMIX & DISTRIBUTION	T111/A-B	FLOW MEASUREMENT	B102	SLUDGE PUMP STATION	B 106	TRANSFORMER & GENERATOR
								B 107	ADMINISTRATION BUILDING

0m 25m 50m 75m 100m

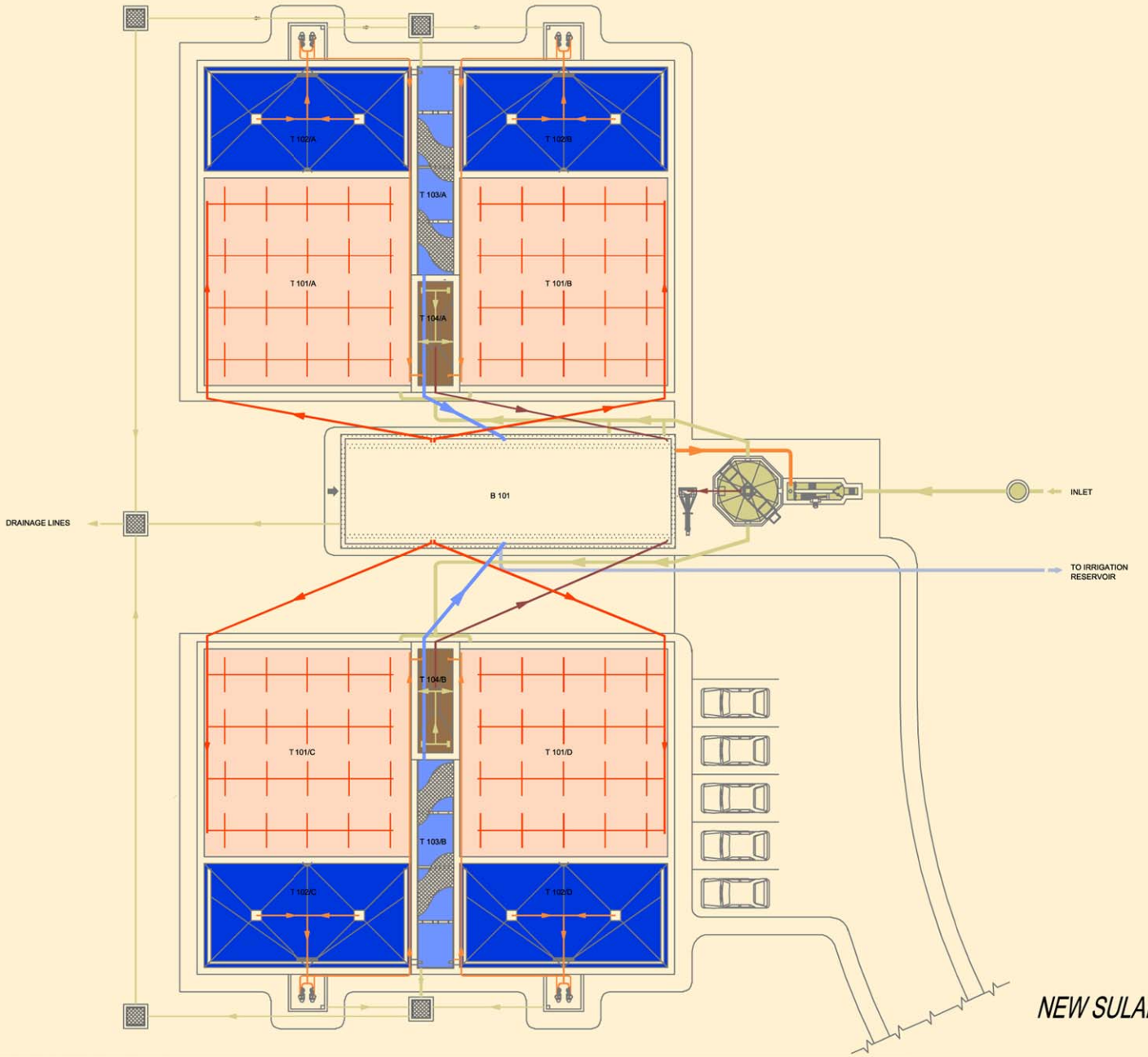


SILOPI POWER PLANT RAW WATER TREATMENT PLANT

NOTATION

T-101	INLET VALVES	T-105	FLOWMETER	T-109	FILTER FEED RESERVOIR	T-113	SLUDGE THICKENING TANK	B-101	SLUDGE PUMPS
T-102/A-B	RAW WATER RESERVOIR	T-106	FLOW SPLITTING	T-110	FILTER BACKWASH RESERVOIR	T-114	BACKWASH RECYLING	B-102	FILTER and CHEMICALS BUILDING
T-103/A-B	OUTLET VALVES	T-107/A-B	RAPID MIX	T-111/A-B	CHLORINATION CONTACT CHAMBER	T-115	DRAINAGE	B-103	SLUDGE PUMPS
T-104	FLOW CONTROL VALVE	T-108/A-B	SEDIMENTATION TANKS	T-112/A-B	TREATED WATER RESERVOIR	T-116	DRAINAGE		

0m 5m 10m 20m 30m



SEWAGE LINES
TREATED EFFLUENT LINES
SLUDGE LINES
AIR LINES

NEW SULAIMANI UNIVERSITY CAMPUS (IRAQ)
WASTEWATER TREATMENT PLANT

NOTATION

T 101/A-B-C-D AERATION TANK

T 102/A-B-C-D SEDIMENTATION TANK

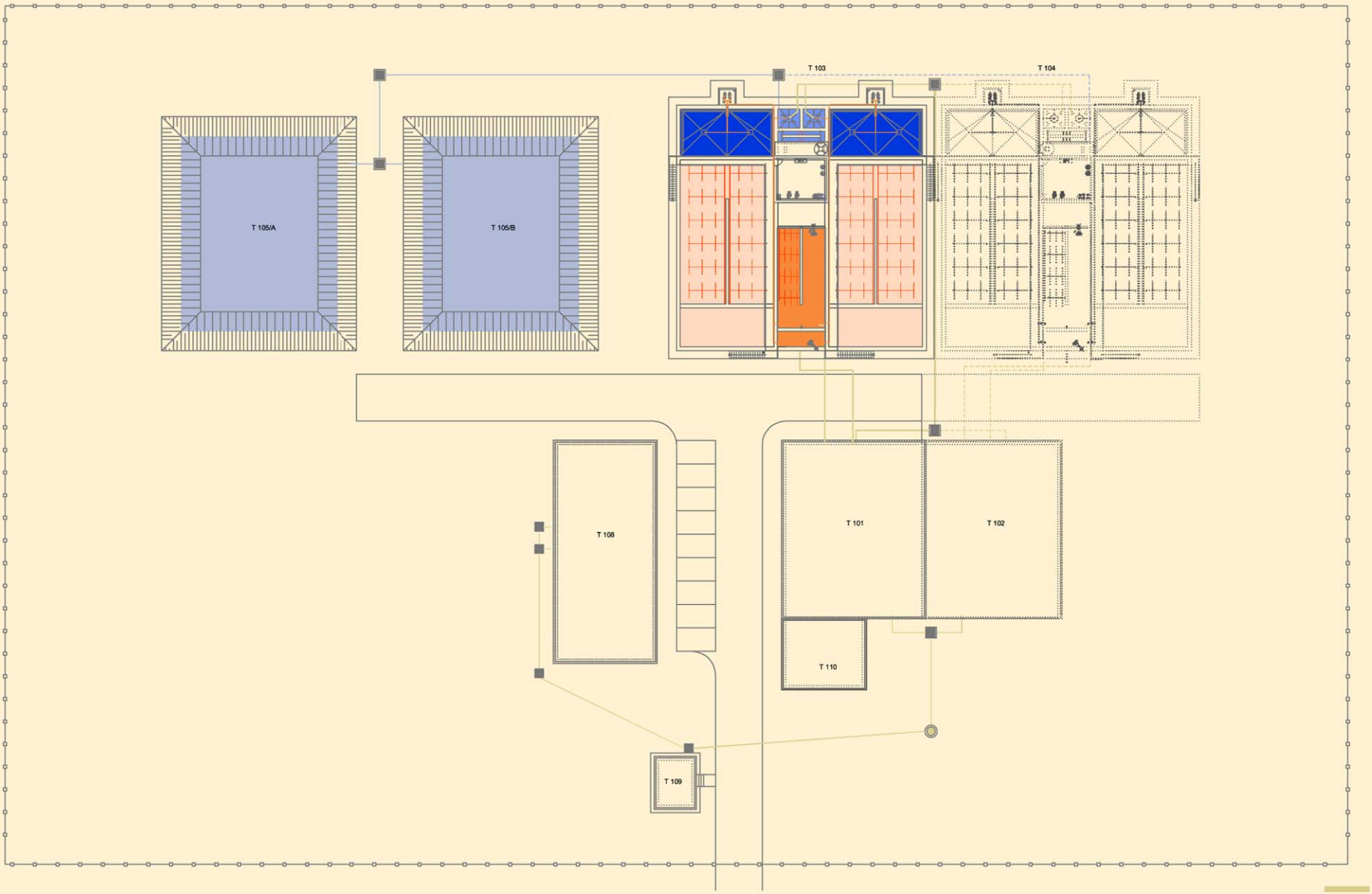
T 103/A-B TREATED WATER TANK

T 104/A-B SLUDGE TANK

B 101 OPERATIONS BUILDING

_Inlet Coarse Screens
_Air Blowers
_Filter Pump
_Filtered Water Storage Tank
_Booster Pump
_Sludge Press
_Fine Screen
_Sand Filters
_Sludge Pump

0m 5m 10m 15m 25m



SEWAGE LINES
TREATED EFFLUENT LINES
SLUDGE LINES
AIR LINES

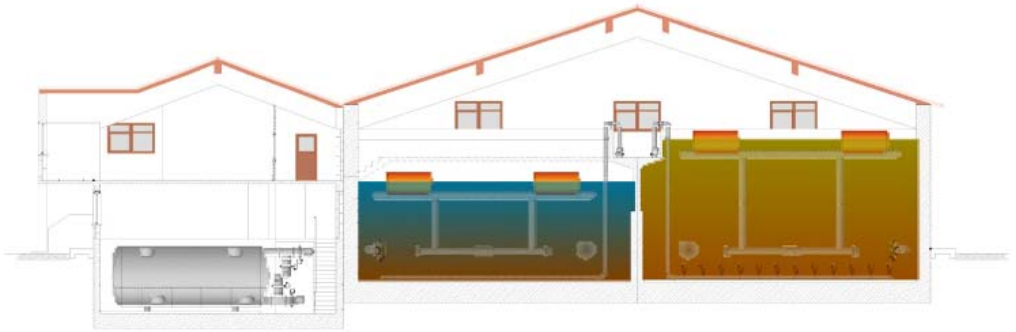
AL QARABULI (LIBYA)
WASTEWATER TREATMENT PLANT

NOTATION

T 101	INLET & EQUILIZATION TANK (PHASE 1)	T 104	BIOLOGICAL REACTOR (PHASE 2)	T 107	SLUDGE DRYING BEDS (PHASE 2)	T 110	TRANSFORMER & GENERATOR BUILDING (PHASE 1)
T 102	INLET & EQUILIZATION TANK (PHASE 2)	T 105/A-B	TREATED WATER STORAGE PONDS (PHASE 1)	T 108	OPERATION BUILDING (PHASE 1)		
T 103	BIOLOGICAL REACTOR (PHASE 1)	T 106	SLUDGE DRYING BEDS (PHASE 1)	T 109	GUARD HOUSE (PHASE 1)		

0m 5m 10m 20m 50m

LEFT SIDE VIEW

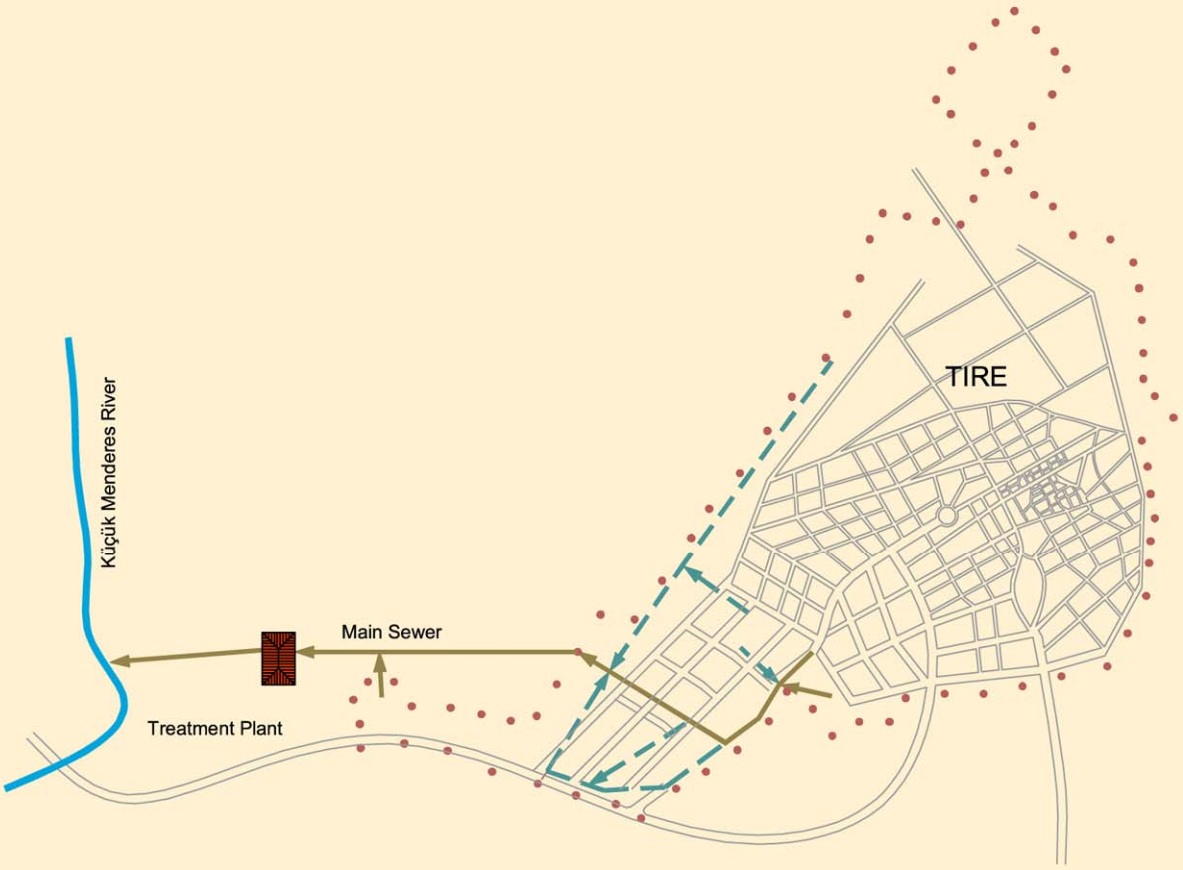


SECTION

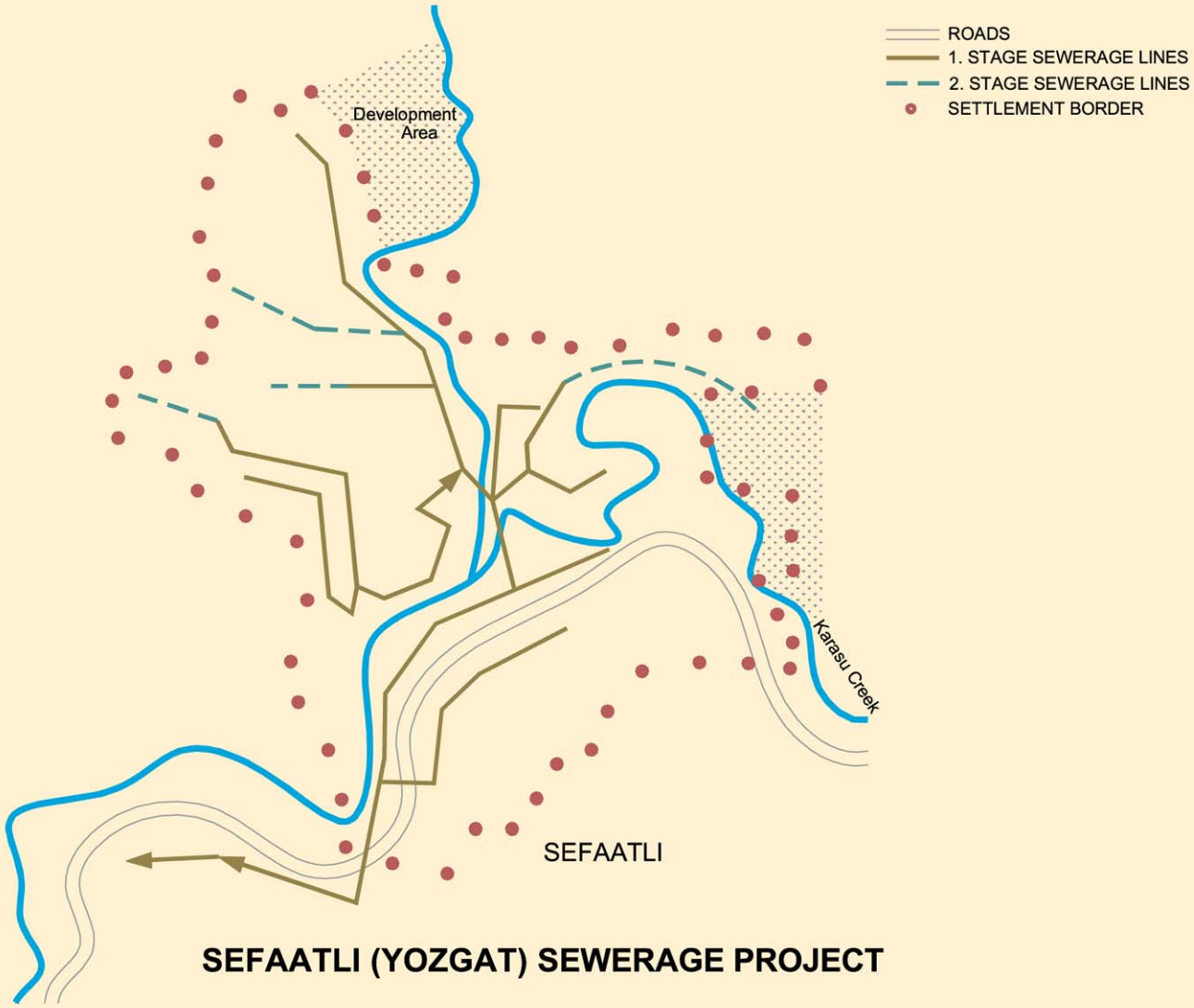
FRONT VIEW

In this popular holiday resort available land being very small, expensive and close to settlements, the employer (Directorate of Specially Protected Areas) has asked the treatment plant to be designed as a very compact unit enclosed in a building. With advanced treatment methods nitrogen and phosphorus removal is also foreseen in addition to the carbonaceous pollutants. The selected process is "Sequencing Batch Reactor" and with the sand filters that follow a very high effluent quality is aimed. The plant is designed to be aesthetically in good conformity with the surrounding environment and buildings. (In the later phase of implementation, a remote area was allocated for the treatment plant and thus the realization of this design is abolished.)

(GÖCEK WASTEWATER TREATMENT PLANT)



TIRE (IZMIR) SEWERAGE PROJECT



SEFAATLI (YOZGAT) SEWERAGE PROJECT

NALLIHAN (ANKARA) SEWERAGE PROJECT

View of the Top of Anaerobic Reactor During Construction Showing the Insulation Details, Gas Dome, Flame Arrester, and Vacuum Break.

NEVSEHIR RAKI (ALCOHOLIC DRINK) FACTORY WWTP

View of the Anaerobic Reactor During Construction

The alcoholic drink factory is constructed by the main contractor NUROL Construction Co. on turn-key bases to the client Turkish State Monopolies.

EKOTEK performed the construction drawings of the WWTP in colloboration with KRUGER Company (Denmark). EKOTEK also supplied sludge handling and dewatering equipment.

Q= 750 m3/day COD= 28000 mg/l

Three consecutive stages of treatment is emloyed in order to bring down trhe effluent quality to acceptable limits of COD= 400 mg/l.

1.st stage : Anaerobic mesophilic treatment

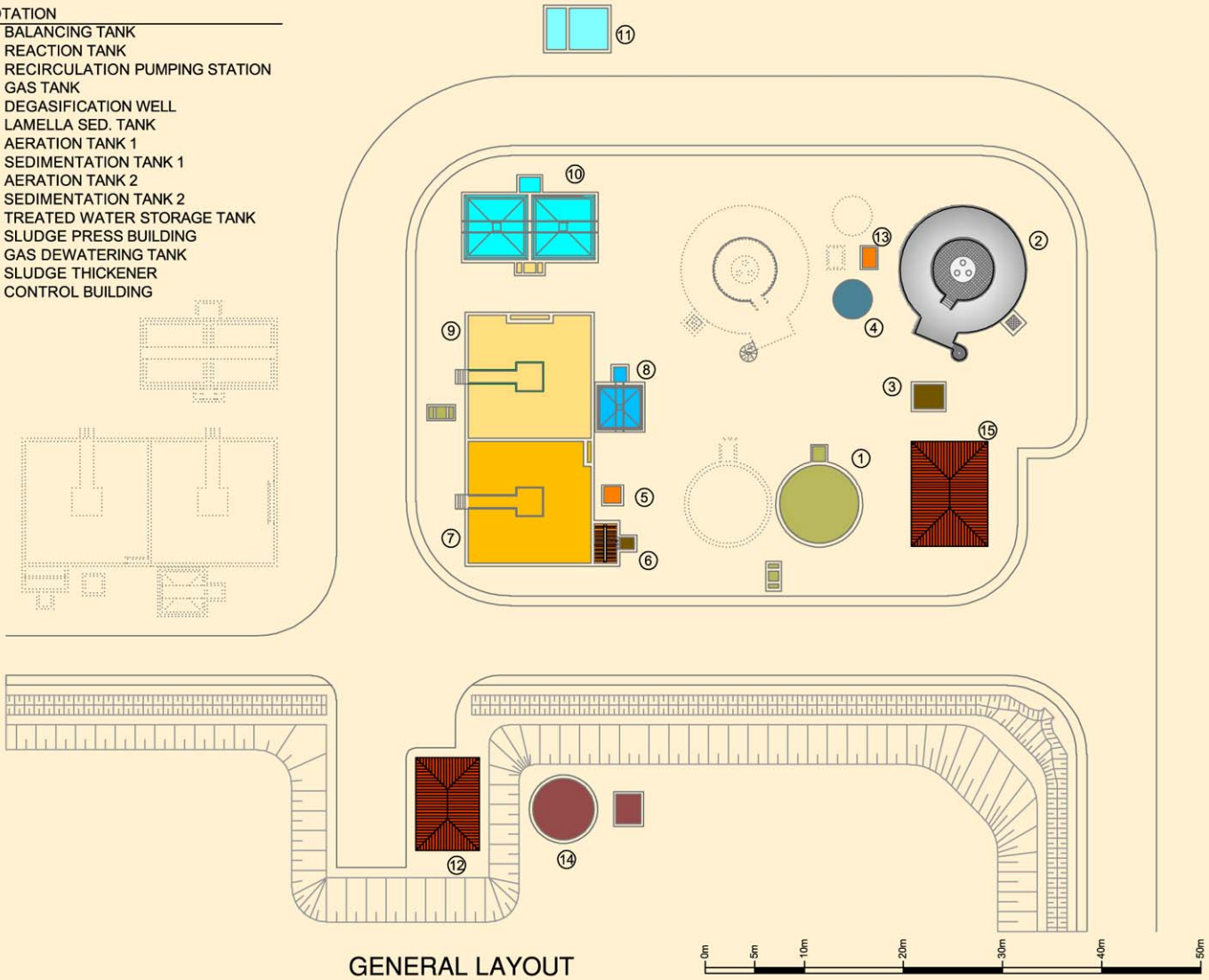
2.nd stage : Highly loaded activated sludge.

3.rd stage : Low loaded activated sludge.

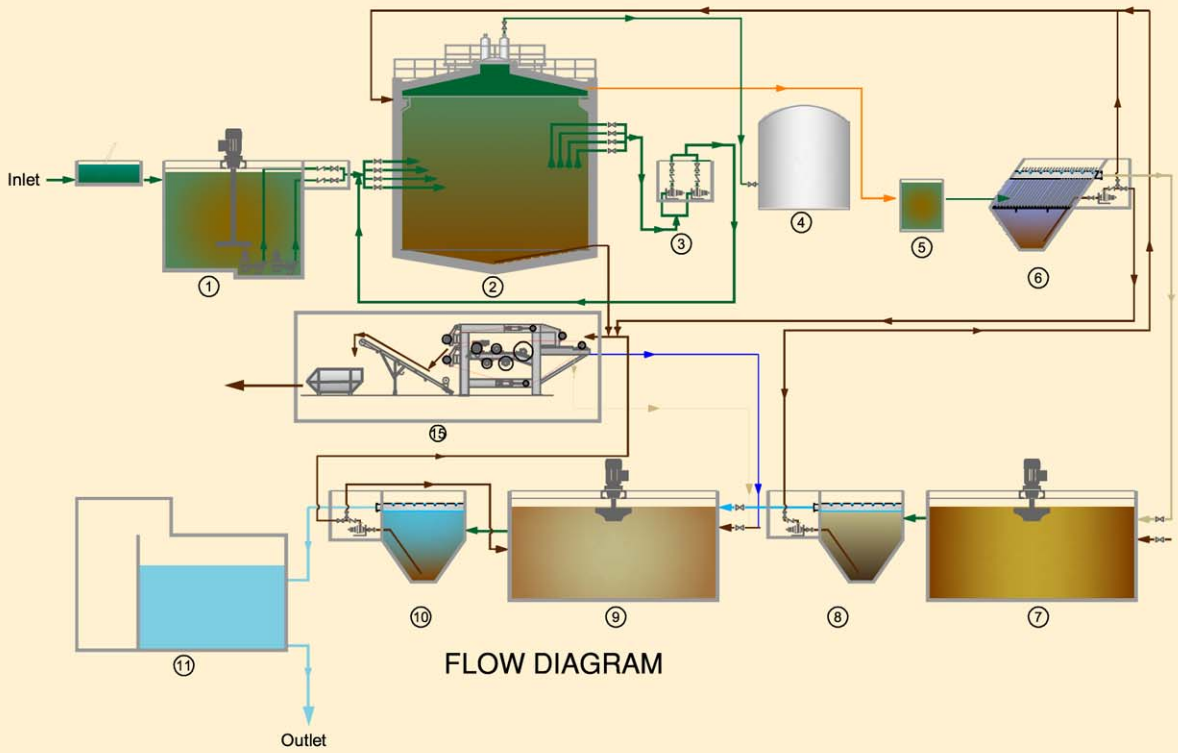
View of the Gas Storage Tank During Construction

NOTATION

1. BALANCING TANK
2. REACTION TANK
3. RECIRCULATION PUMPING STATION
4. GAS TANK
5. DEGASIFICATION WELL
6. LAMELLA SED. TANK
7. AERATION TANK 1
8. SEDIMENTATION TANK 1
9. AERATION TANK 2
10. SEDIMENTATION TANK 2
11. TREATED WATER STORAGE TANK
12. SLUDGE PRESS BUILDING
13. GAS DEWATERING TANK
14. SLUDGE THICKENER
15. CONTROL BUILDING

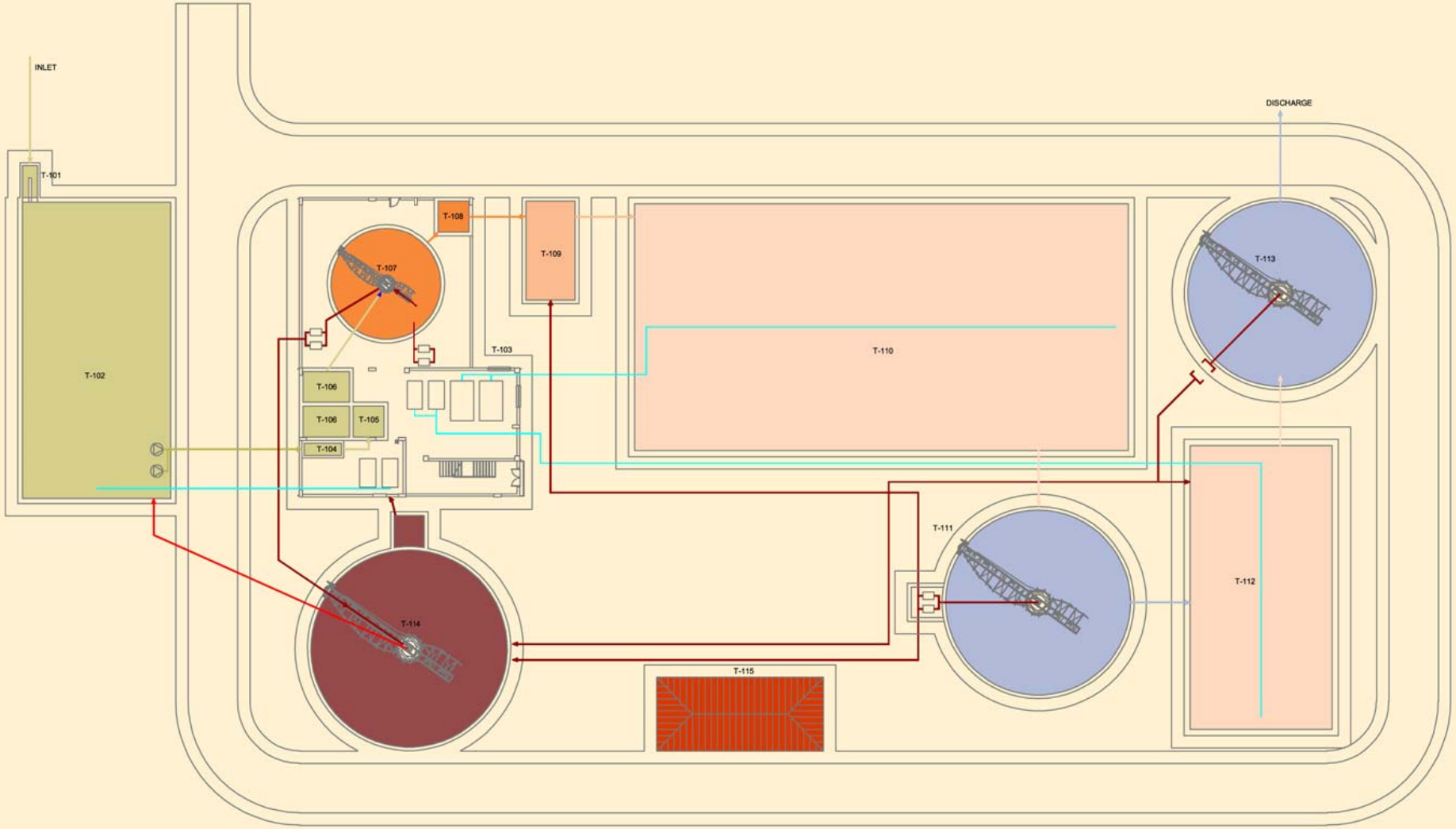


GENERAL LAYOUT



FLOW DIAGRAM

NEVSEHIR RAKI (ALCOHOLIC DRINK) FACTORY
WASTEWATER TREATMENT PLANT



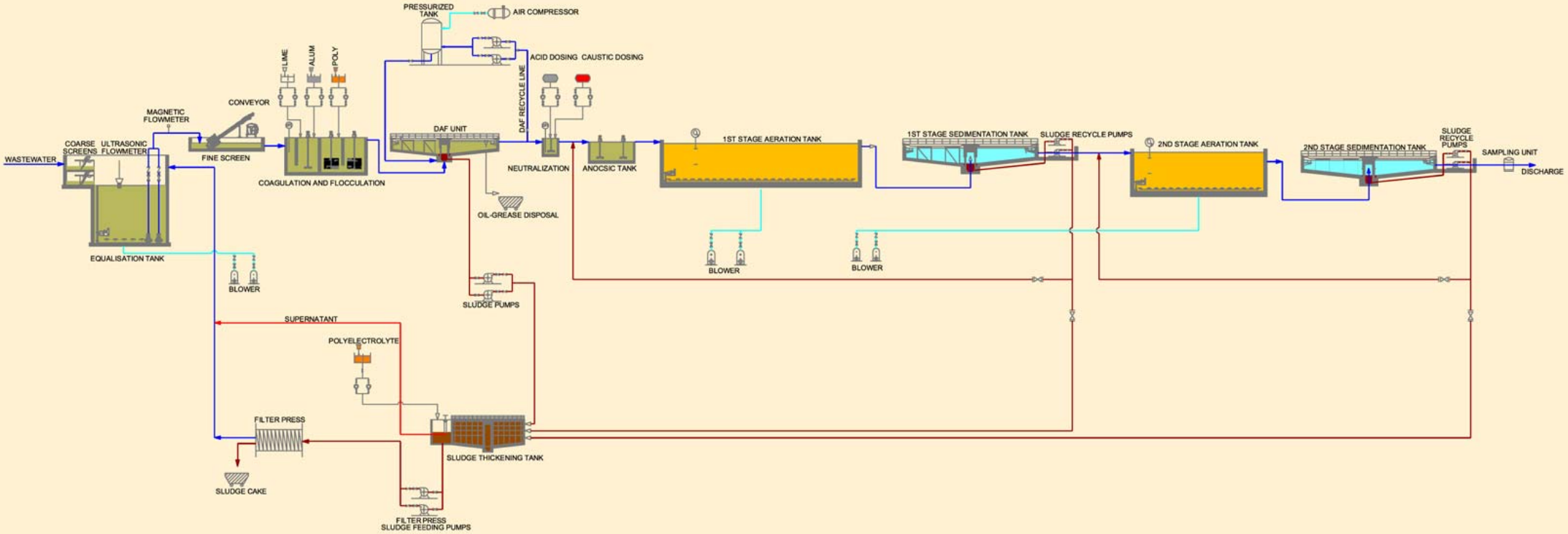
SEWAGE LINES
TREATED EFFLUENT LINES
SLUDGE LINES
AIR LINES

AYTAC POULTRY WASTEWATER TREATMENT PLANT

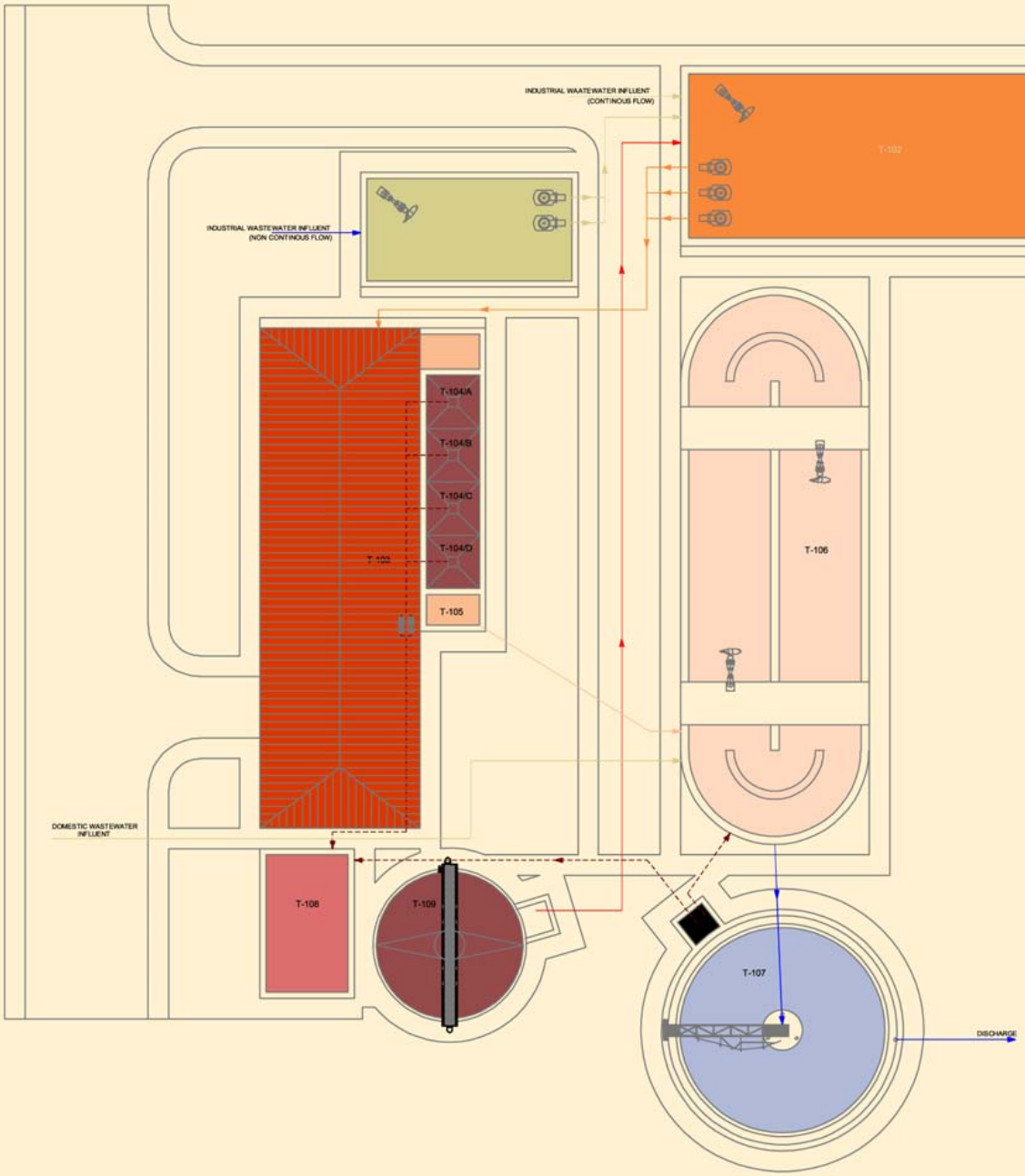
NOTATION

T-101 COARSE SCREEN	T-104 FINE SCREEN	T-107 DIFFUSED AIR FLOATATION TANK (DAF)	T-110 1ST STAGE AERATION TANK	T-113 2ND STAGE SEDIMENTATION TANK
T-102 EQUALISATION TANK	T-105 RAPID MIXING	T-108 NEUTRALIZATION TANK	T-111 1ST STAGE SEDIMENTATION TANK	T-114 SLUDGE THICKENING TANK
T-103 OPERATION BUILDING	T-106 FLOCCULATION TANK	T-109 ANOCSIC TANK	T-112 2ND STAGE AERATION TANK	T-115 GENERATOR BUILDING

0m 5m 10m 20m 30m



AYTAC POULTRY
WASTEWATER TREATMENT PLANT
FLOW CHART



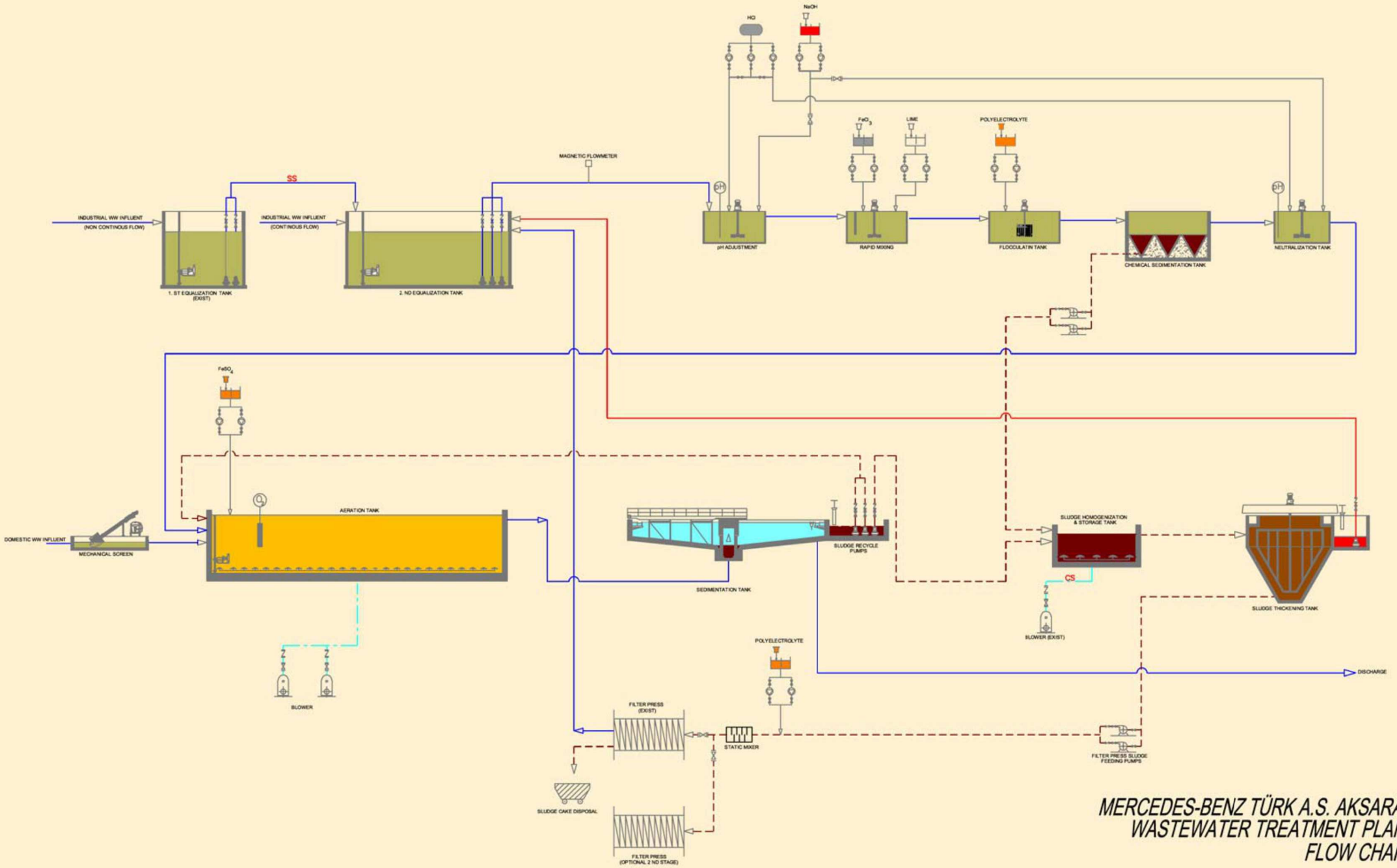
SEWAGE LINES
TREATED EFFLUENT LINES
SLUDGE LINES
AIR LINES

MERCEDES-BENZ TÜRK A.S. AKSARAY AUTOMOTIVE FACTORY WASTEWATER TREATMENT PLANT (FEASIBILITY STUDY)

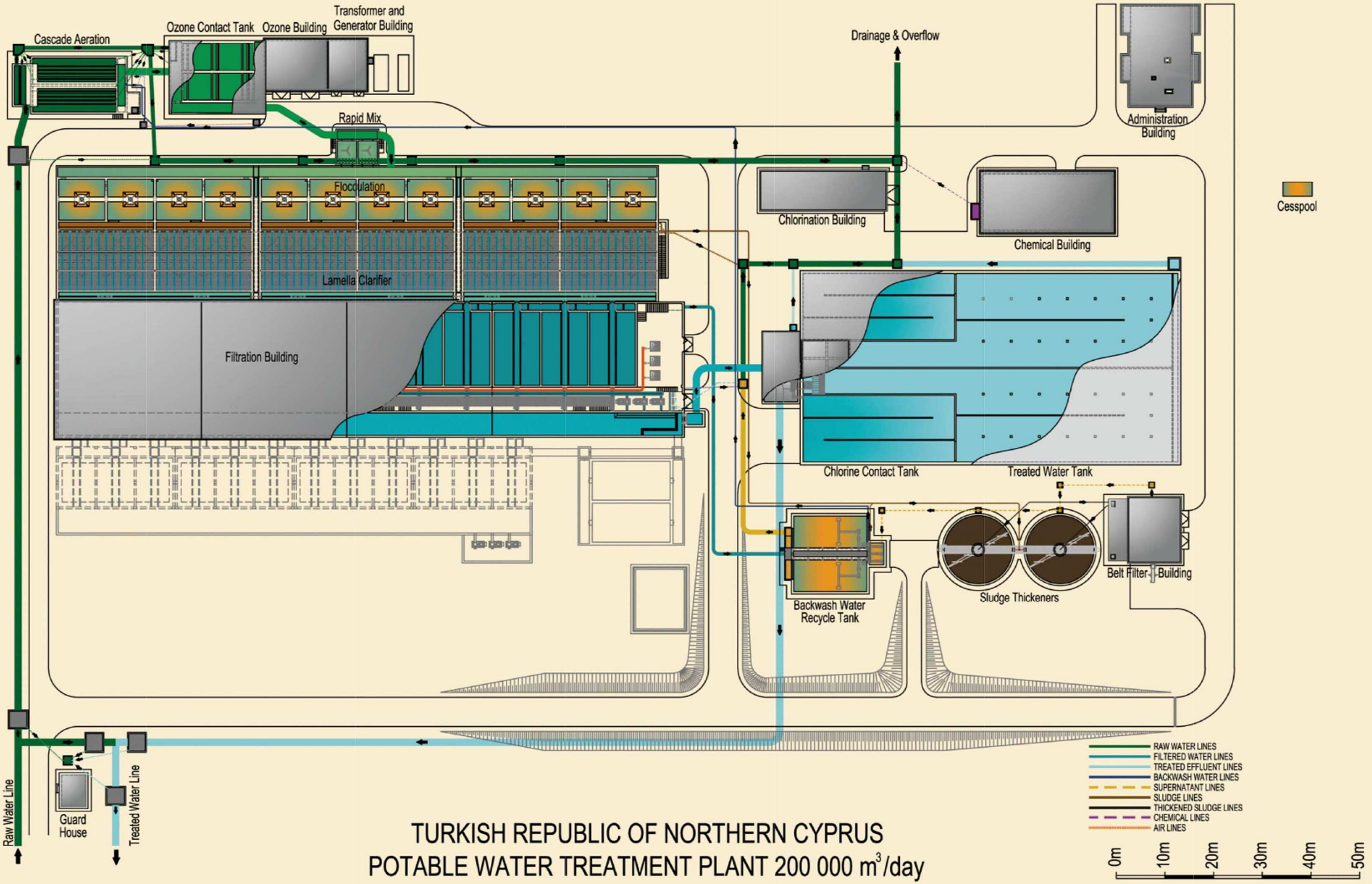
NOTATION

T-101 1st EQUILIZATION TANK (EXIST)	T-103 OPERATION BUILDING	T-105 NEUTRALISATION TANK	T-107 BIOLOGICAL SEDIMENTATION TANK	T-109 SLUDGE THICKENING TANK
T-102 2st EQUILIZATION TANK	T-104 CHEMICAL SEDIMENTATION TANK	T-106 AERATION TANK	T-108 SLUDGE HOMOGENIZATION TANK	

0m 5m 10m 20m



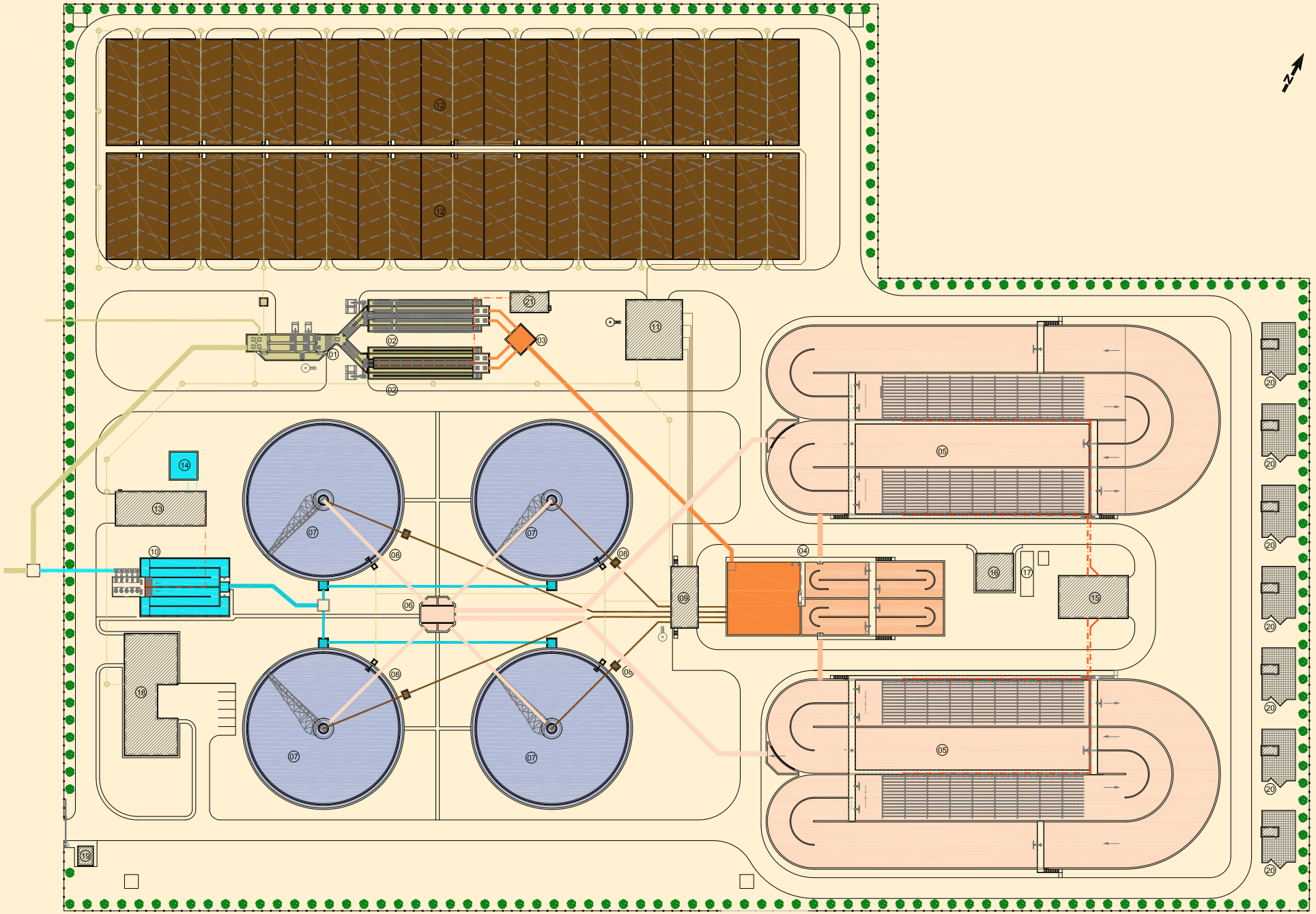
MERCEDES-BENZ TÜRK A.S. AKSARAY WASTEWATER TREATMENT PLANT FLOW CHART



TURKISH REPUBLIC OF NORTHERN CYPRUS
POTABLE WATER TREATMENT PLANT 200 000 m^3/day

Raw water will be supplied from Anamur River in southern Turkey by means of 70km submarine pipeline and will be stored in Gecitkoy dam reservoir. Treatment plant is located in Çamlıbel region and treated water will be conveyed by several hundred km pipeline to various regions in the island. The whole project is awarted to ESER Consultancy Company by DSI (State Hydraulics Works)

EKOTEK as a subconsultant to ESER Company, is resposible for the design of the treatment plant.

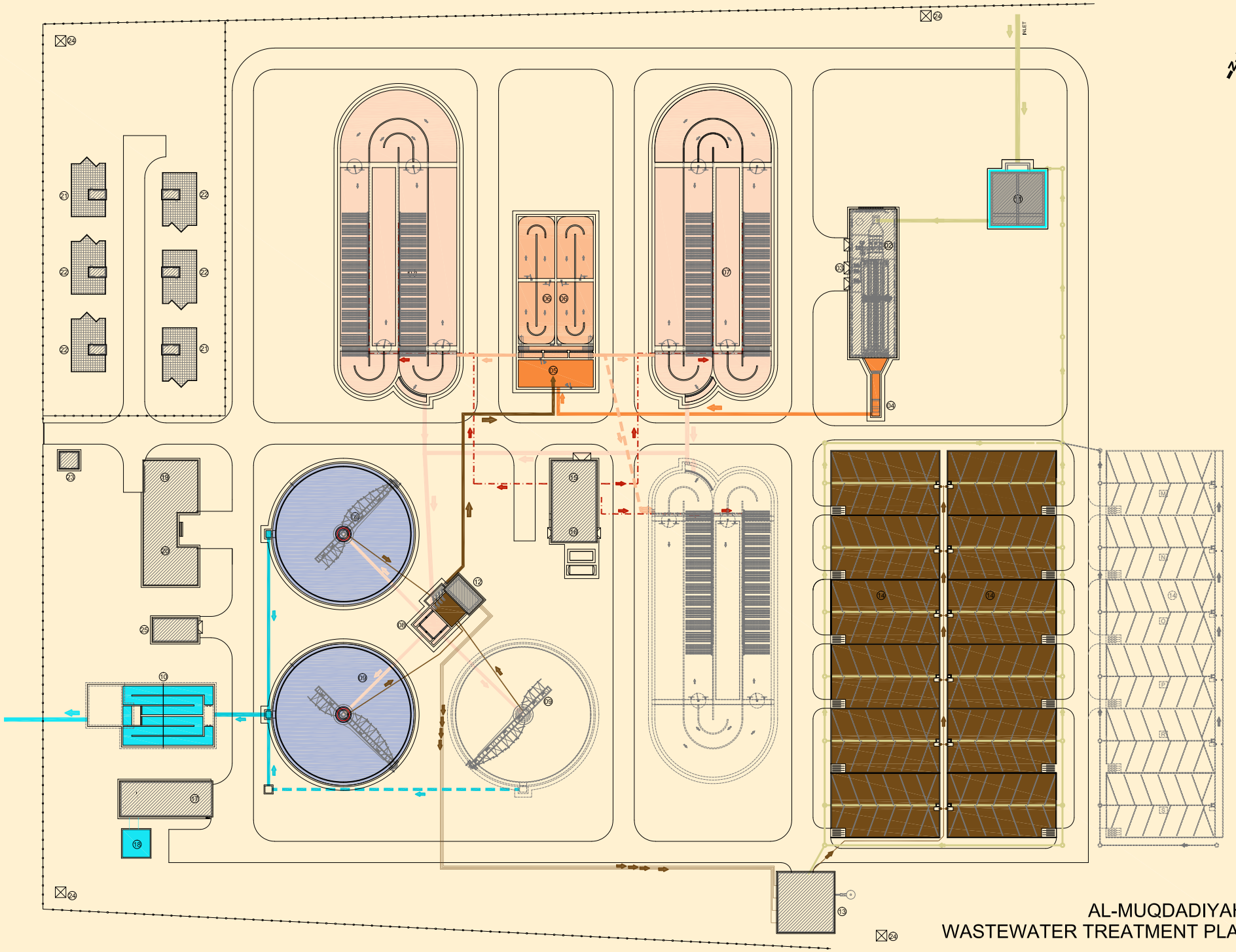


AL-RAMADI CITY (IRAQ)
WASTEWATER TREATMENT PLANT PROJECT
100 000 m³/day

NOTATION

01. SCREENING STRUCTURE
02. GRIT & GREASE SEPARATOR
03. DEGRITTED WASTEWATER COLLECTION CHAMBER
04. BIO-P TANK CHAMBER-1,2,3
05. AERATION TANK
06. DISTRIBUTION CHAMBER
07. CLARIFIER
08. SLUDGE VALVE CHAMBER
09. COMBINED SLUDGE PUMP STATION
10. CHLORINE CONTACT TANK & EFFLUENT PUMP STATION
11. MECHANICAL THICKENING BUILDING
12. SLUDGE DRYING BEDS
13. CHLORINE BUILDING
14. SERVICE WATER TANK
15. BLOWER BUILDING
16. POWER & MCC BUILDING
17. BLOWER BUILDING
18. ADMINISTRATION BUILDING
19. GUARD HOUSE
20. OPERATOR & ENGINEER HOUSE
21. GRIT & GREASE BLOWER BUILDING

0m 20m 40m 60m 80m

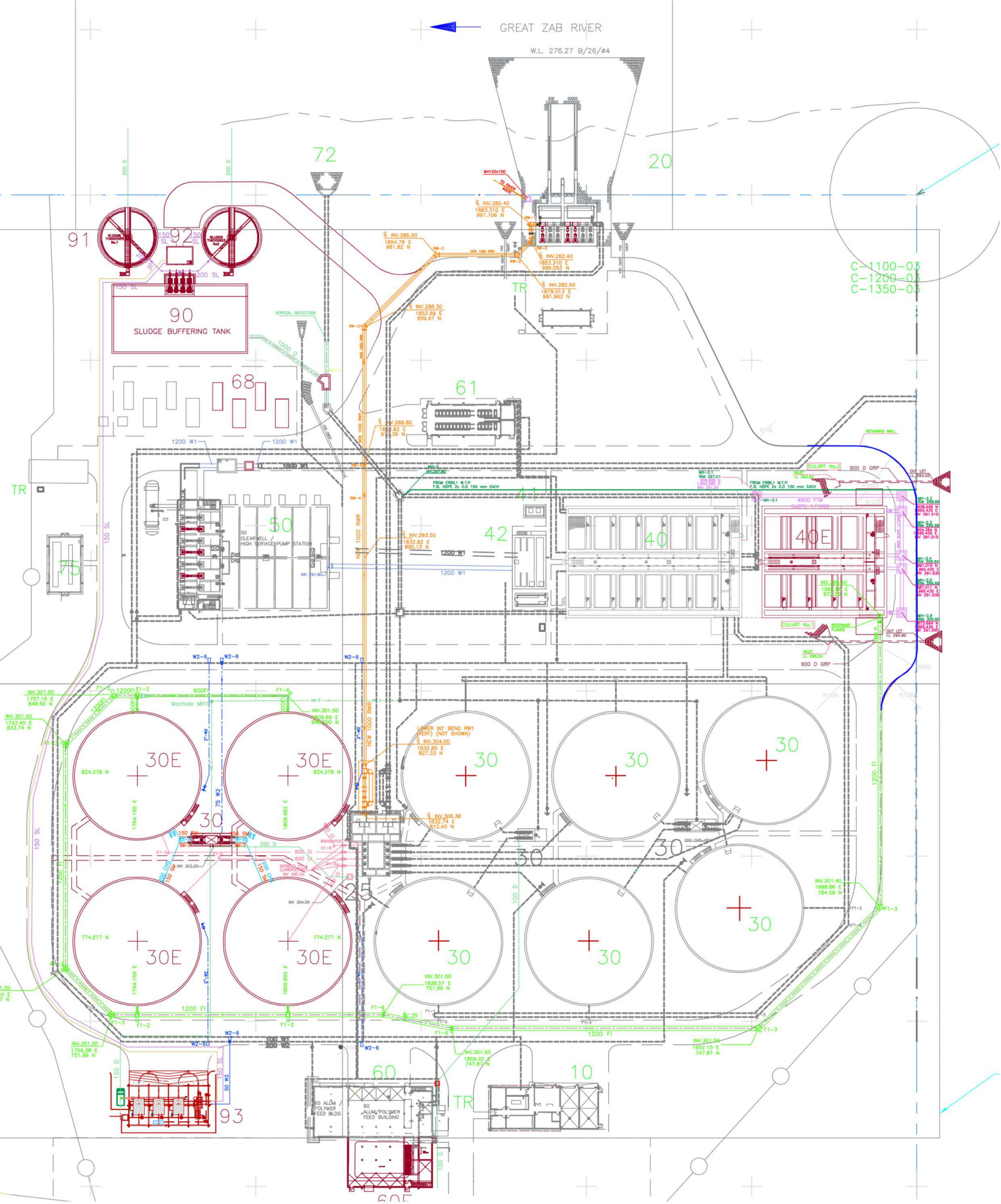


NOTATION

01. FINE SCREEN CHAMBER
02. AERATED GRIT AND GREASE REMOVAL TANK
03. GRIT TANK BLOWER HOUSE
04. FLOW MEASURING CHAMBER
05. SLUDGE DENITRIFICATION TANK
06. ANAEROBIC BIOPHOSPHORUS TANK
07. NITRIFICATION / DENITRIFICATION TANK
08. DISTRIBUTION CHAMBER
09. SEDIMENTATION TANK
10. CHLORINE CONTACT CHAMBER
11. INLET PUMP STATION
12. RAS / SAS PUMP STATION
13. SLUDGE THICKENING BUILDING
14. SLUDGE DRYING BEDS
15. BLOWER BUILDING
16. TRANSFORMER AND GENEREATOR BUILDING
17. CHLORINATION BUILDING
18. SERVICE WATER TANK
19. STORE and WORKSHOP
20. ADMINISTRATION BUILDING
21. ENGINEERS HOUSE
22. OPERATOR HOUSE
23. GUARD HOUSE
24. GUARD TOWERS
25. WORKSHOP

AL-MUQDADIYAH CITY (IRAQ)
WASTEWATER TREATMENT PLANT PROJECT
46 500 m³/day

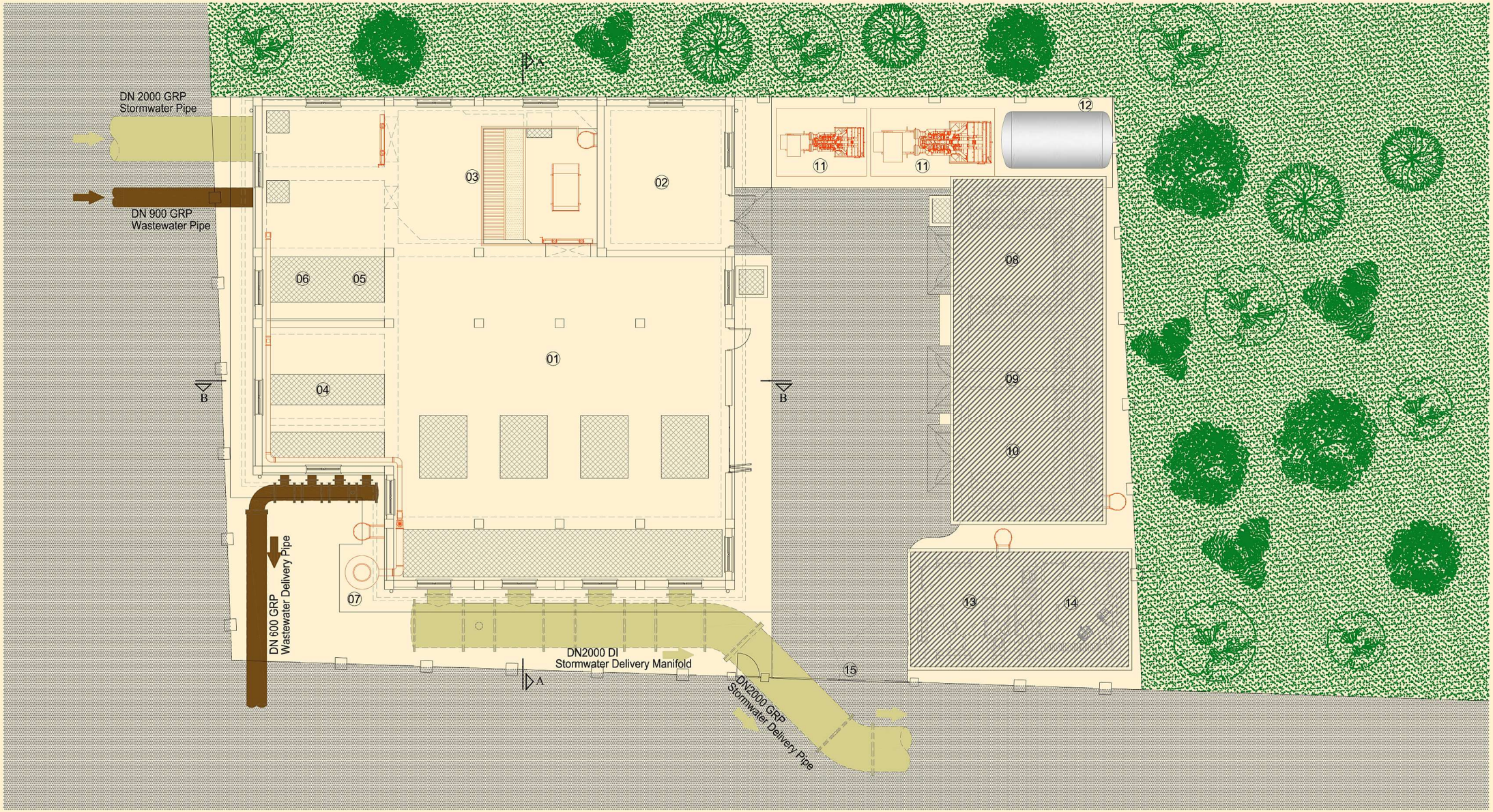
0m 20m 40m 60m 80m



CONSULTANCY SERVICES FOR
ERBIL (IRAQ) WATER PROJECT 2ND PHASE CONSTRUCTION OF TREATMENT PLANT (IFRAZ-3)

EKOTEK gives consultancy services to the contractor (STFA-FERNAS_KALYON Joint Venture) for the 2nd phase construction of Erbil Water Project (Ifraz-3) The scope of EKOTEK includes:

- Checking the conceptural designs given by the client.
- Make any corrections and prepare designs for improvement of the various units of the treatment plant.
- Attend meadings with the client and the client's consultant for technical discussions.
- Contract the suppliers of electrical and mechanical equipment and make technical discussions and financial negotiotions on behalf of the contractor.

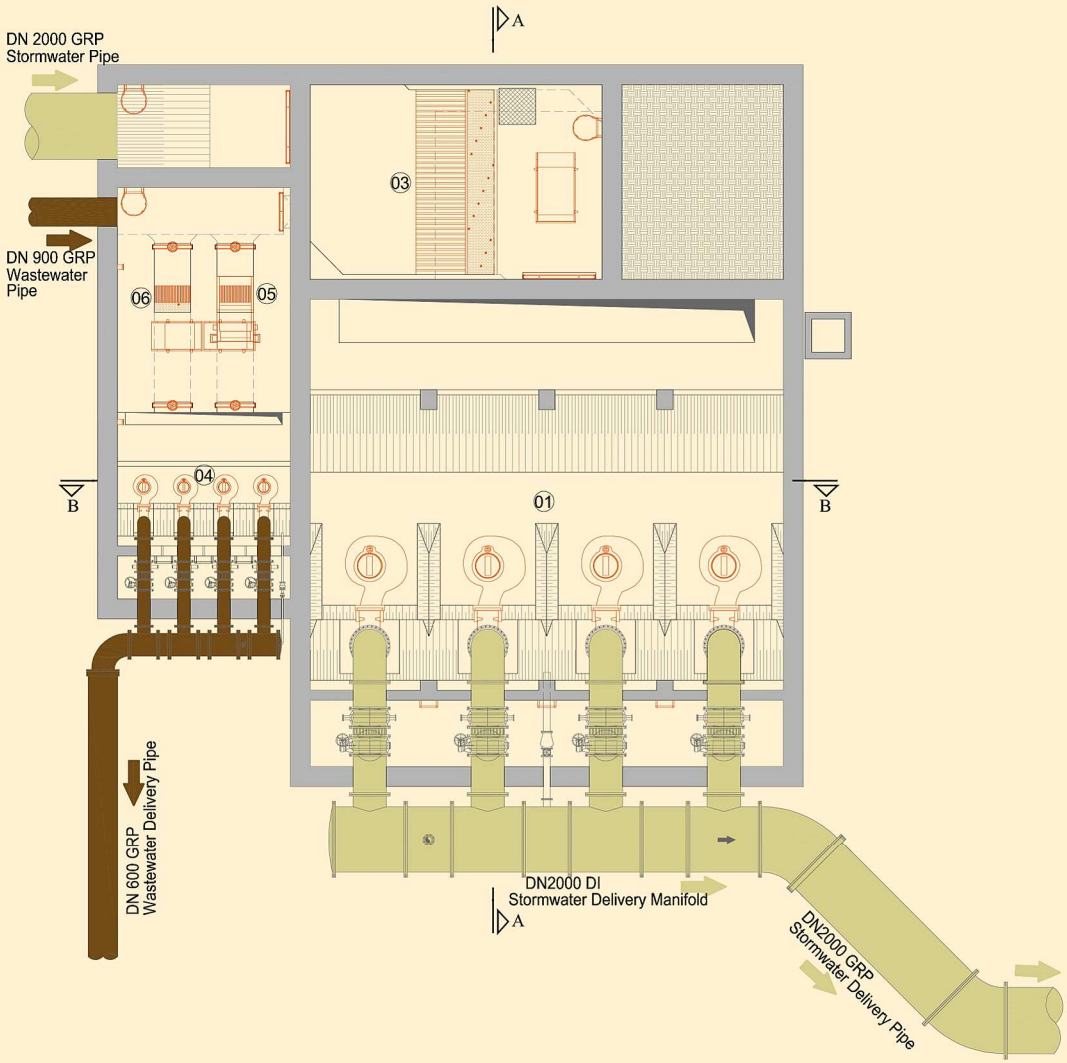


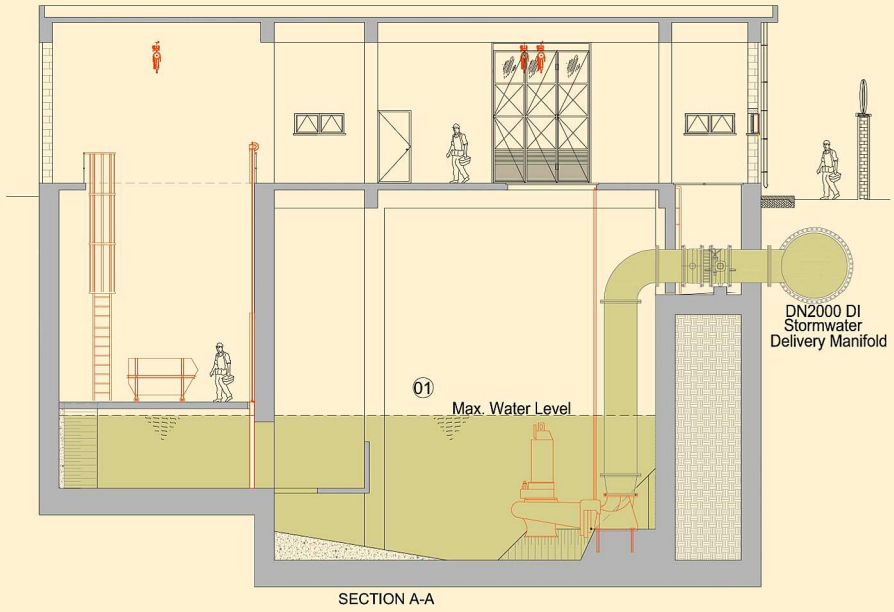
NOTATION

01. STORM WATER PUMPS
02. STORAGE
03. MANUALLY CLEANED SCREENS FOR STORM WATER
04. SEWAGE PUMPS
05. MECHANICALLY CLEANED SCREENS FOR WASTEWATER
06. MANUALLY CLEANED SCREENS FOR WASTEWATER
07. ODOUR REMOVAL
08. LOW VOLTAGE PANELS, MCC, PLC PANELS ROOM
09. TRANSFORMER ROOM
10. MEDIUM VOLTAGE PANEL ROOM
11. GENERATOR
12. FUEL TANK
13. GUARD ROOM
14. OPERATOR ROOM
15. GATE

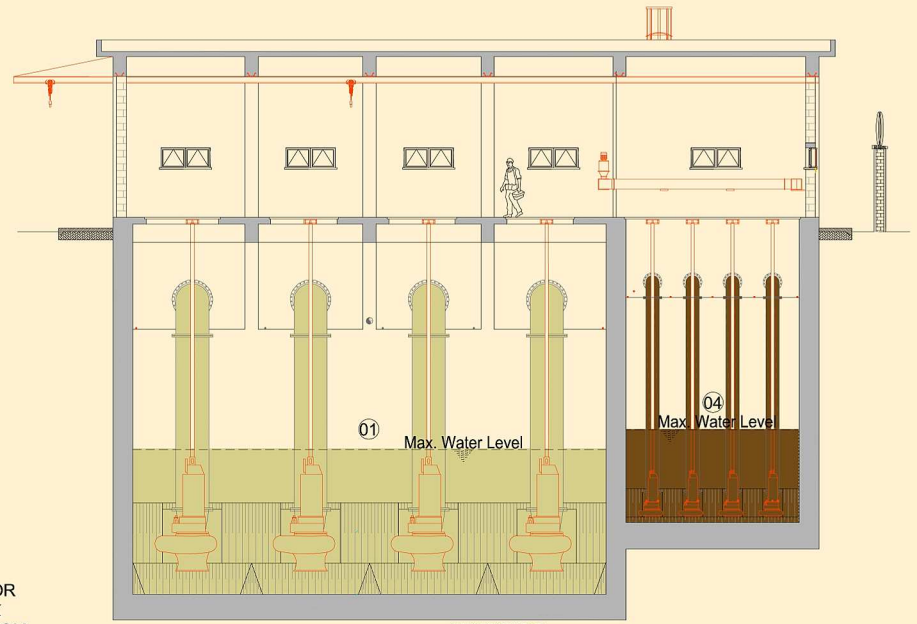
MUQTADIYAH & AL RASHAED SEWERAGE NETWORKS
COMBINED (SANITARY & STORMWATER) PUMP STATIONS

MUQ PS-1	Q= 17820 m³/hr	Hm= 10 m	Stormwater
	Q= 1718 m³/hr	Hm= 22 m	Wastewater
MUQ PS-2	Q= 21438 m³/hr	Hm= 10 m	Stormwater
	Q= 1836 m³/hr	Hm= 24 m	Wastewater
MUQ PS-3	Q= 24840 m³/hr	Hm= 15 m	Stormwater
	Q= 1998 m³/hr	Hm= 15 m	Wastewater
MUQ PS-4	Q= 8208 m³/hr	Hm= 10 m	Stormwater
	Q= 378 m³/hr	Hm=25 m	Wastewater
MUQ PS-5	Q= 15822 m³/hr	Hm= 15 m	Stormwater
AL-RASH PS-1	Q= 1728 m³/hr	Hm= 9 m	Stormwater
	Q= 252 m³/hr	Hm= 7.50 m	Wastewater
AL-RASH PS-2	Q= 3360 m³/hr	Hm= 9 m	Stormwater
	Q= 1050 m³/hr	Hm= 28 m	Wastewater





SECTION A-A



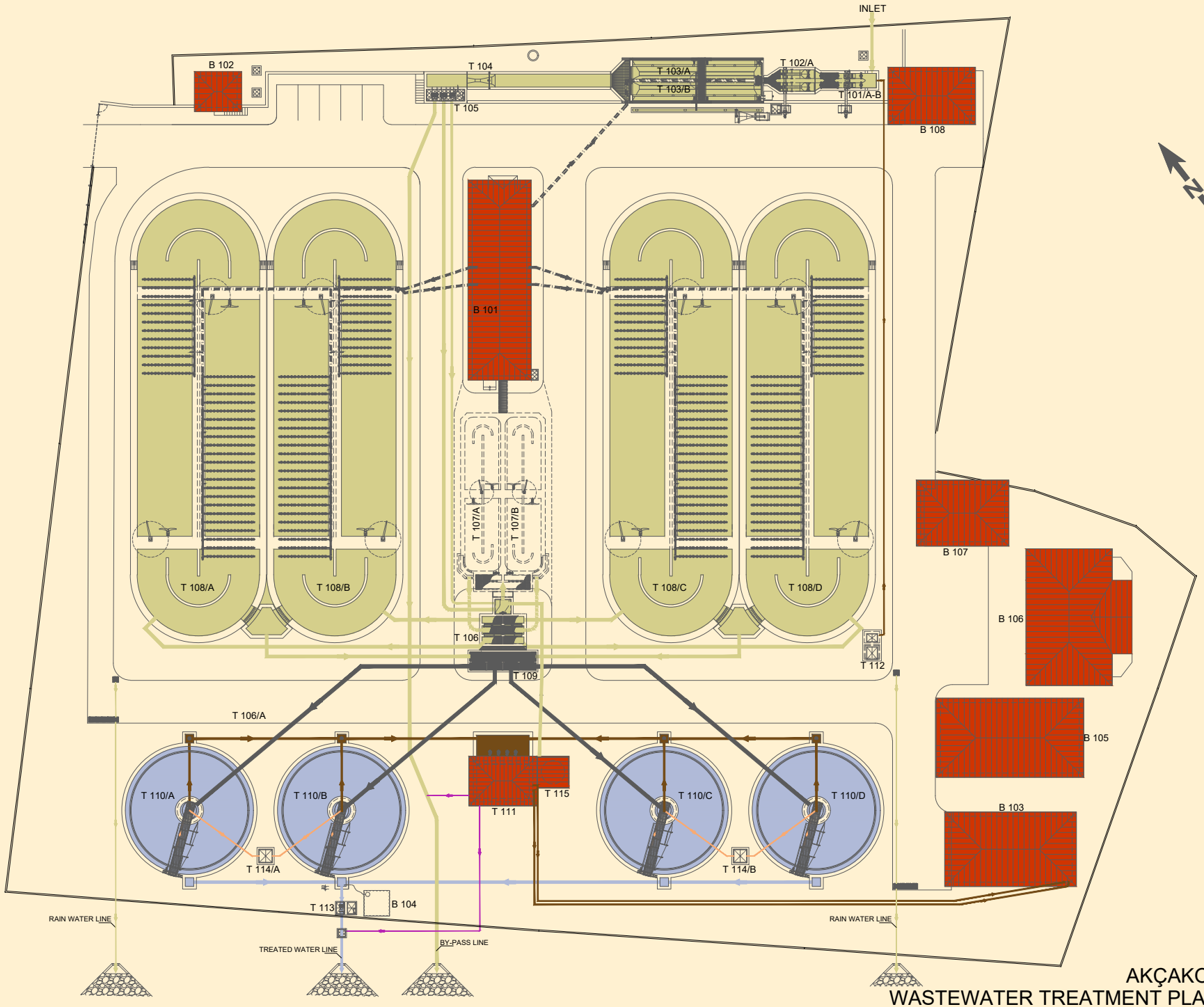
SECTION B-B

NOTATION

01. STORM WATER PUMPS
02. STORAGE
03. MANUALLY CLEANED SCREENS FOR STORM WATER
04. SEWAGE PUMPS
05. MECHANICALLY CLEANED SCREENS FOR WASTEWATER
06. MANUALLY CLEANED SCREENS FOR WASTEWATER
07. ODOUR REMOVAL
08. LOW VOLTAGE PANELS, MCC, PLC PANELS ROOM
09. TRANSFORMER ROOM
10. MEDIUM VOLTAGE PANEL ROOM
11. GENERATOR
12. FUEL TANK
13. GUARD ROOM
14. OPERATOR ROOM
15. GATE

MUQTADIYAH & AL RASHAED SEWERAGE NETWORKS
COMBINED (SANITARY & STORMWATER) PUMP STATIONS

MUQ PS-1	Q= 17820 m³/hr	Hm= 10 m	Stormwater
	Q= 1718 m³/hr	Hm= 22 m	Wastewater
MUQ PS-2	Q= 21438 m³/hr	Hm= 10 m	Stormwater
	Q= 1836 m³/hr	Hm= 24 m	Wastewater
MUQ PS-3	Q= 24840 m³/hr	Hm= 15 m	Stormwater
	Q= 1998 m³/hr	Hm= 15 m	Wastewater
MUQ PS-4	Q= 8208 m³/hr	Hm= 10 m	Stormwater
	Q= 378 m³/hr	Hm=25 m	Wastewater
MUQ PS-5	Q= 15822 m³/hr	Hm= 15 m	Stormwater
AL-RASH PS-1	Q= 1728 m³/hr	Hm= 9 m	Stormwater
	Q= 252 m³/hr	Hm= 7.50 m	Wastewater
AL-RASH PS-2	Q= 3360 m³/hr	Hm= 9 m	Stormwater
	Q= 1050 m³/hr	Hm= 28 m	Wastewater

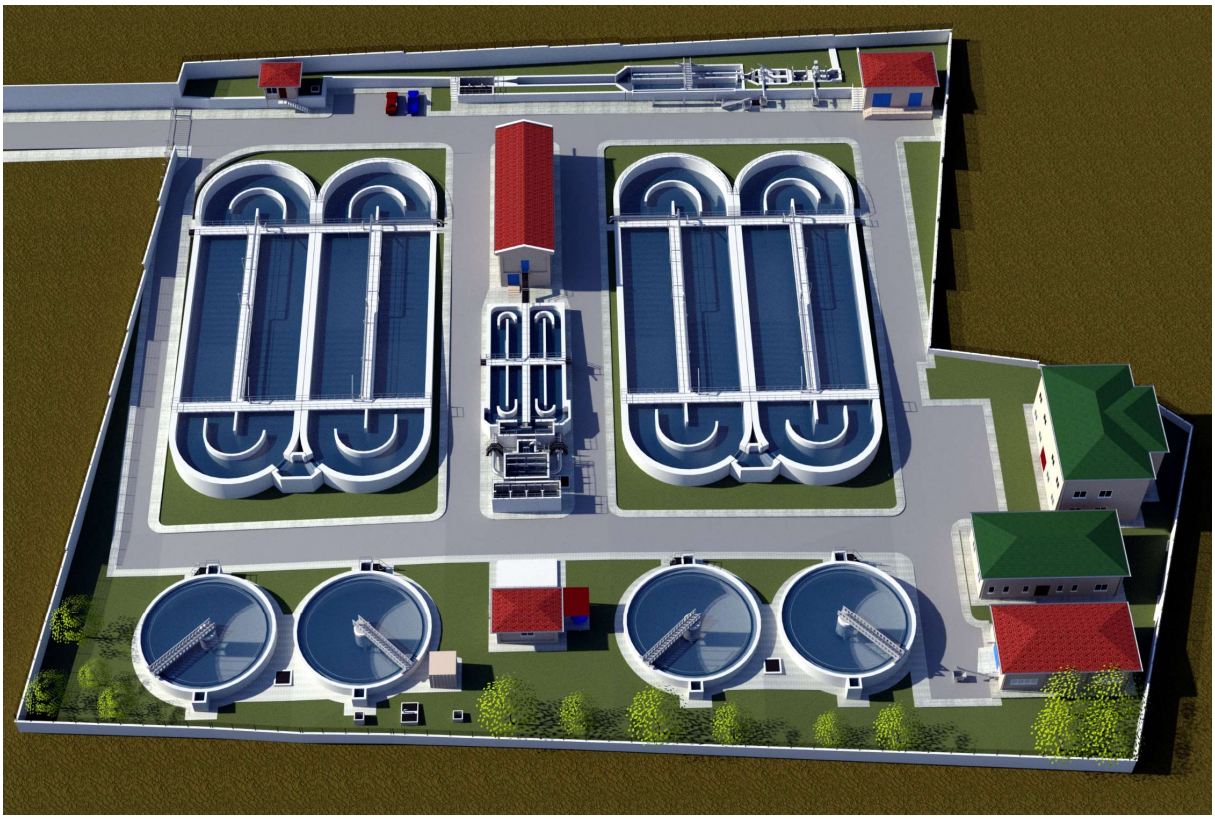


AKÇAKOCA (DÜZCE)
WASTEWATER TREATMENT PLANT PROJECT

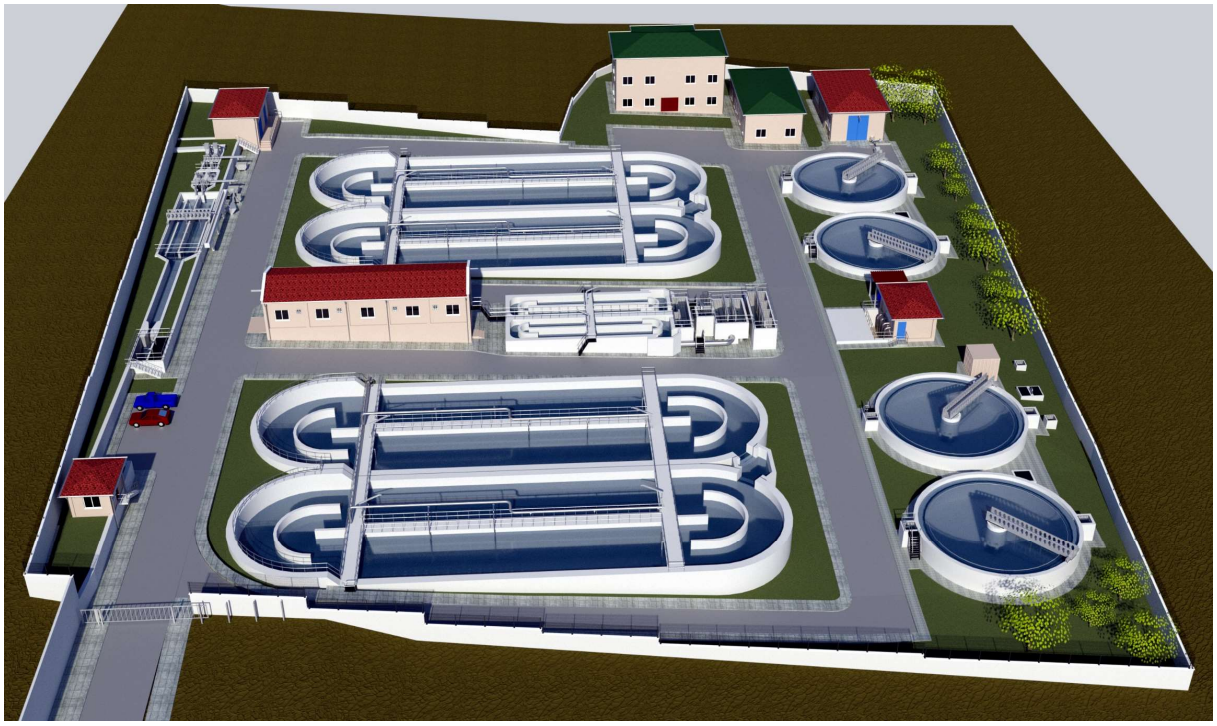
NOTATION

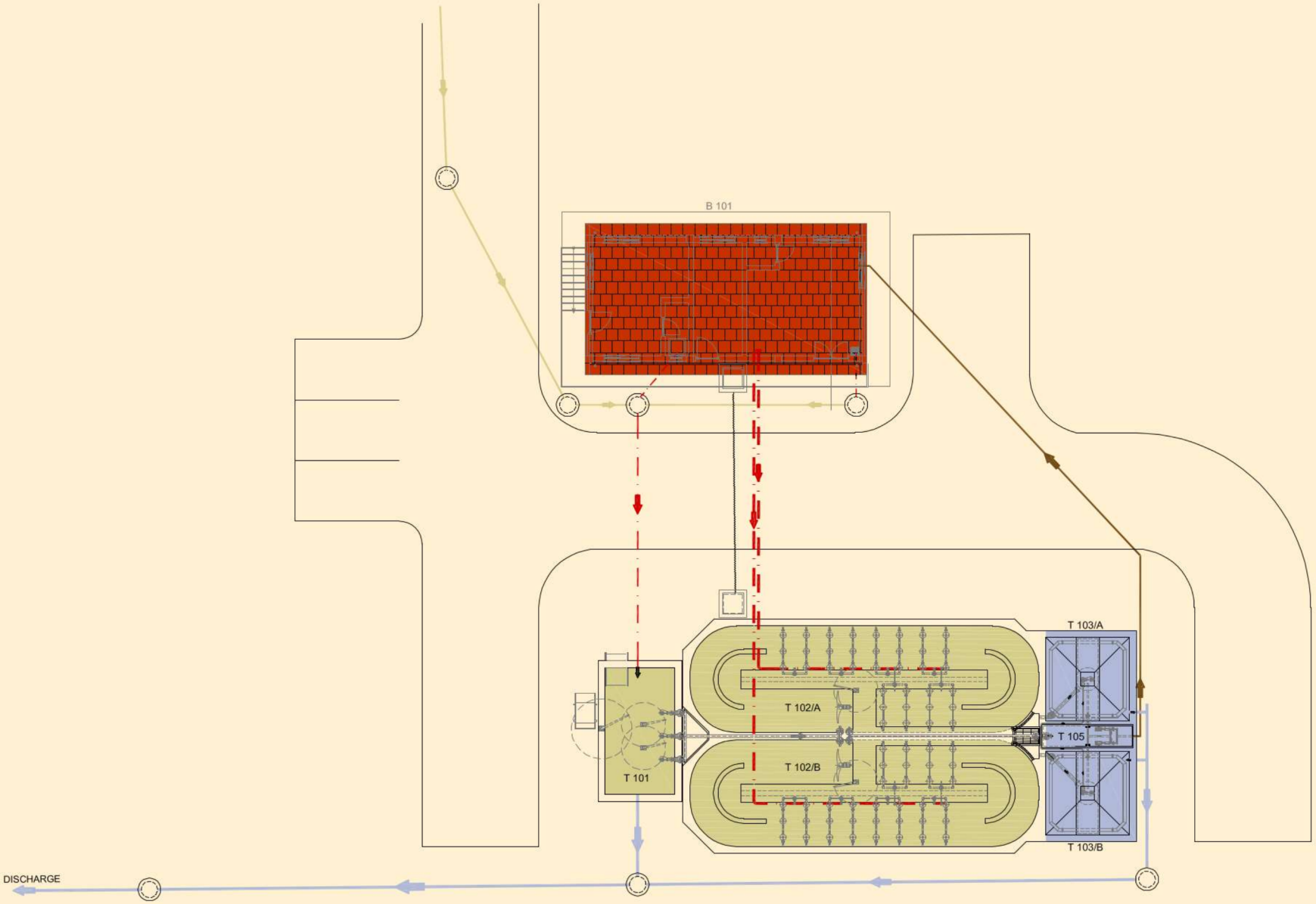
T 101/A-B	SCREENS CHANNEL	T 106/A-B	DISTRIBUTION STRUCTURE - 2	B 101	OPERATION BUILDING	B 105	WORKSHOP
T 102/A-B	AERATED GRIT AND GREASE CHAMBER	T 107/A-B-C-D	SETTLING TANKS	B 102	STAFF RESIDENCE	B 106	BLOWER BUILDING
T 103	DISTRIBUTION STRUCTURE - 1	T 108	RAS PUMP STATION	B 103	SLUDGE DEWATERING BUILDING	B 107	GUARD HOUSE
T 104/A-B	BIO-P TANK (SECOND STAGE)	T 109	SAS PUMP STATION	B 104	TRANSFORMER/GENERATOR BUILDING		
T 105/A-B-C-D	NITRIFICATION / DENITRIFICATION TANKS						

0m 10m 20m 30m 40m



AKÇAKOCA WWTP
3D COMPUTER MODELLING





SEWAGE LINES
SLUDGE LINES
TREATED WATER LINES
AIR LINES

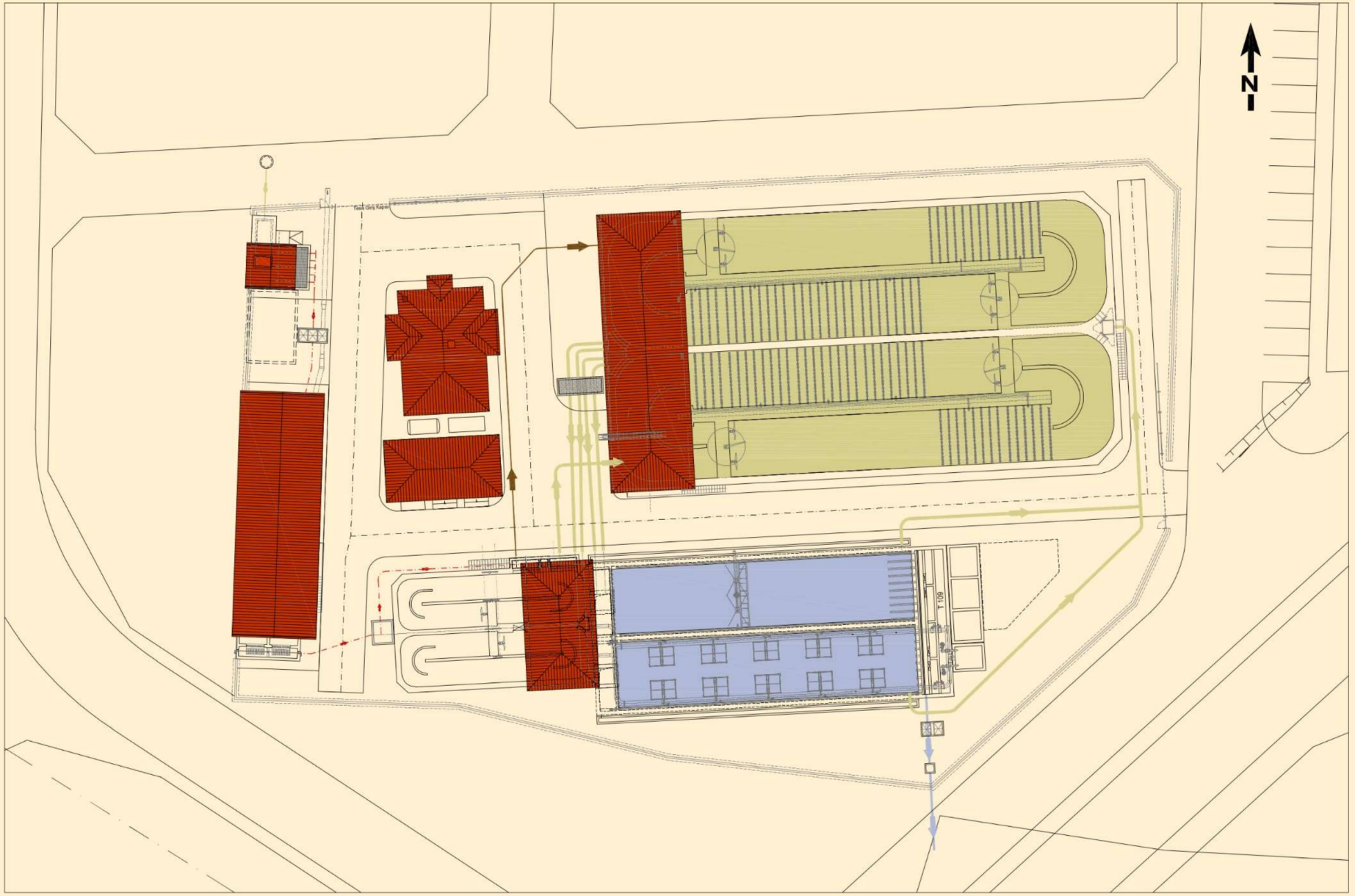
SMALL CAPACITY WASTEWATER TREATMENT PLANTS for: DODURGA, DELİCE, SEBEN TOWNS

Population : 3.500

0m 5m 10m 15m 20m

NOTATION

T 101 SCREEN and GRIT CHAMBER , INLET PUMP STATION
T 102/A-B NITRIFICATION / DENITRIFICATION TANKS
T 103/A-B SETTLING TANKS
B 101 BLOWER, SLUDGE PRESS and CONTROL BUILDING

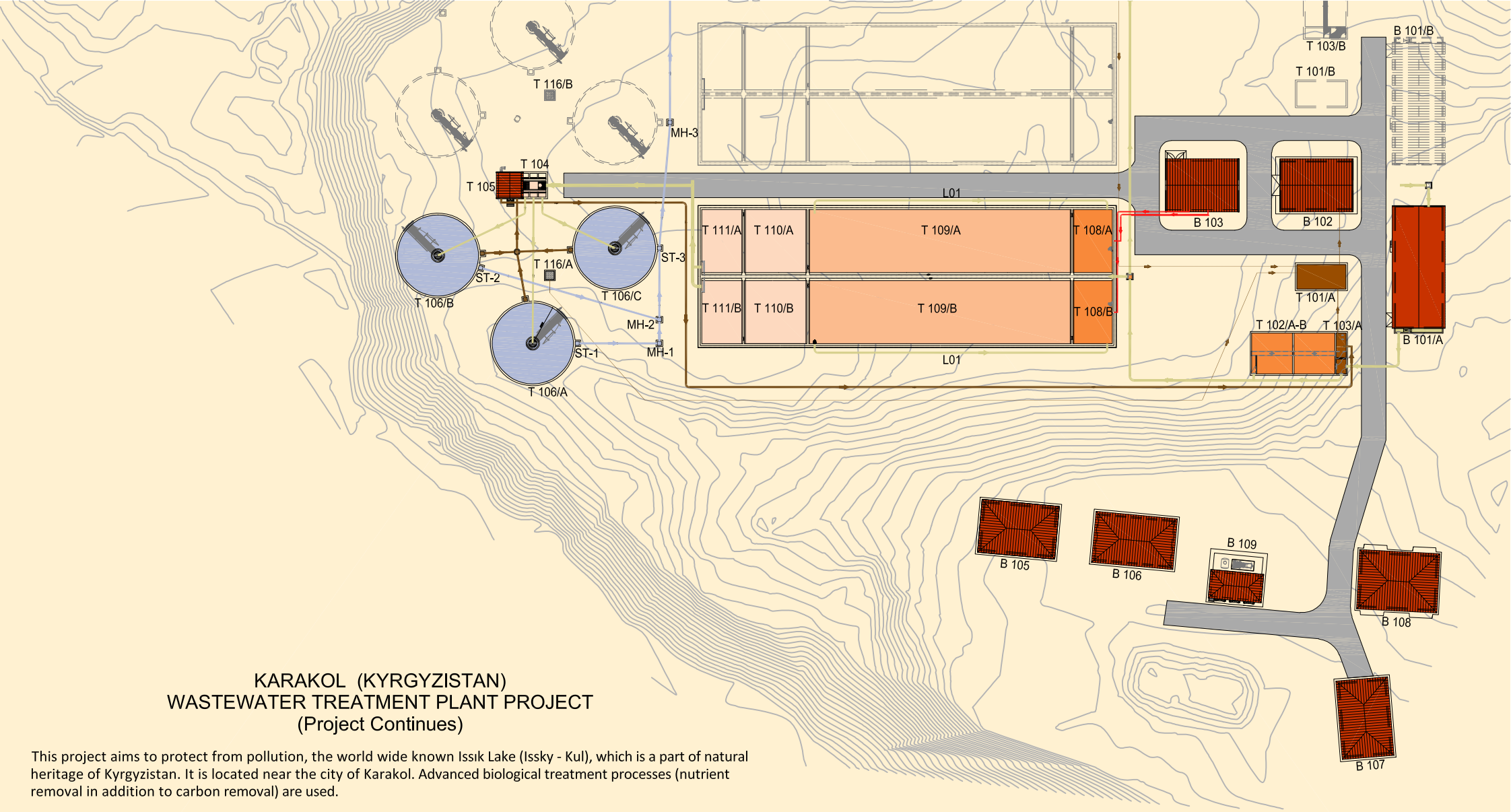


The project is designed to be an extended aeration activited sludge plant with biological phosphorus and nitrogen removal for stage 1.
Then at stage 2. half of the tanks will be modified to be an MBR (Membrane Biological Reactor), and at stage 3 all of the tanks will be modified to be an MBR plant.
Construction drawings are made and equipment specified for all 3 stages.

MARMARAEREĞLİSİ
WASTEWATER TREATMENT PLANT PROJECT
Capacity : 13.500 m³/day

0m 10m 20m 30m 40m


N
T 118/A
T 118/B
T 118/C
T 118/D
T 117
T 107/A
T 115
T 107/B
B 104
T 112/B
T 112/A
T 113/B
T 113/A
T 114
MH-4
T 102/C-D



KARAKOL (KYRGYZISTAN)
WASTEWATER TREATMENT PLANT PROJECT
(Project Continues)

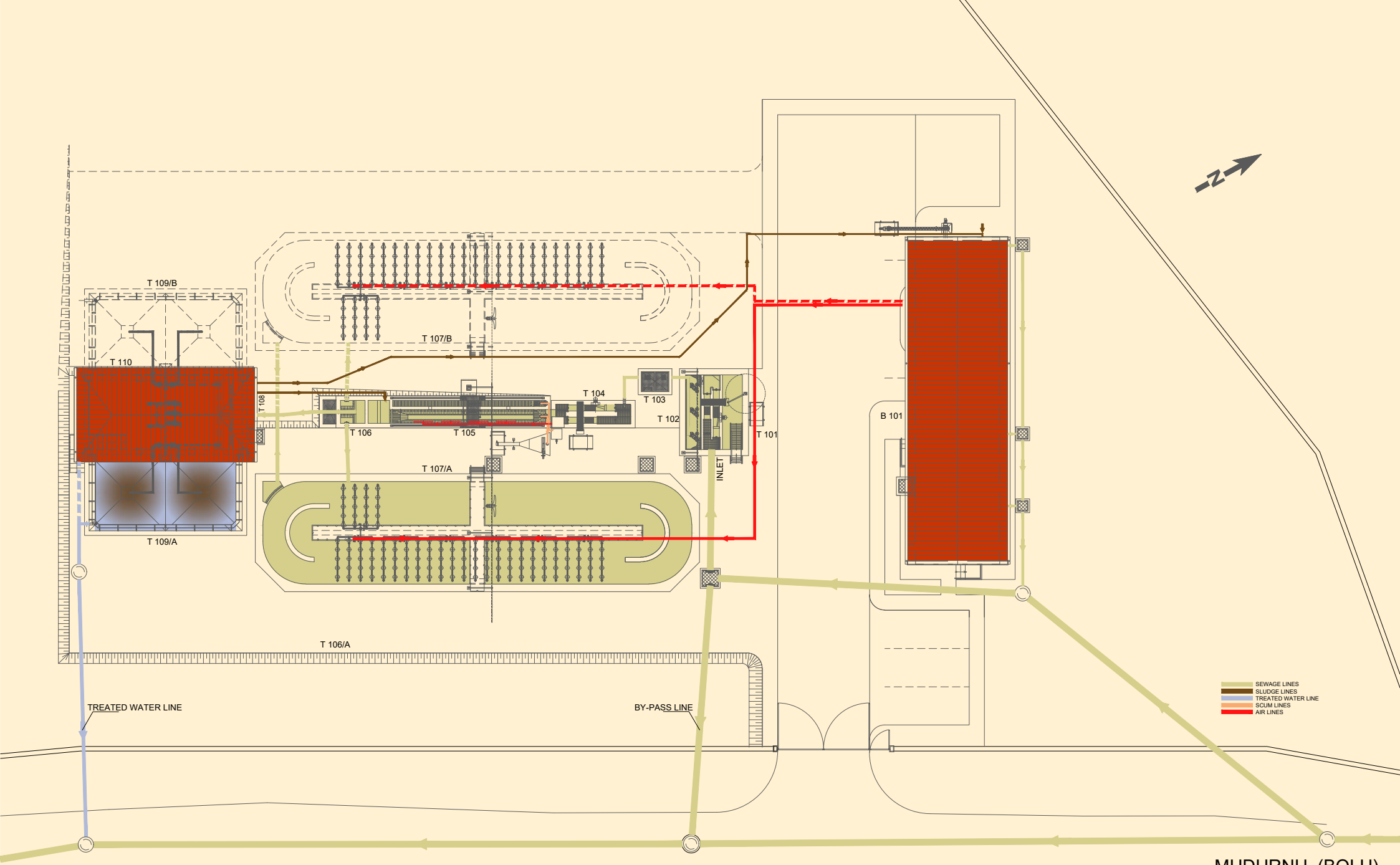
This project aims to protect from pollution, the world wide known Issık Lake (Issky - Kul), which is a part of natural heritage of Kyrgyzistan. It is located near the city of Karakol. Advanced biological treatment processes (nutrient removal in addition to carbon removal) are used.

The process configuration is as follows:

- Anaerobic biological phosphorus removal.
- Nitrogen removal by nitrification / denitrification (bardenpho process)
- Effluent polishing and removal (in cold water) of ammonia by MBRR (moving bed biological reactor)
- Disinfection by chlorination.
- Dechlorination
- Storage of treated effluent in lagoons for 3-4 months for further improvement of water quality.

NOTATION		NOTATION					
T101/A	- SLUDGE BUFFER TANK	T110/A-B	- BIOLOGICAL REACTOR -3 (ANOXIC TANK-2)	B101/A-B	- SCREENS BUILDING AND GRIT AND GREASE CHAMBER BUILDING	MH	- MANHOLES
T102/A-B	- ANAEROBIC BIO-P TANKS	T111/A-B	- BIOLOGICAL REACTOR -4 (AEROBIC TANK-2)	B102	- SLUDGE DEWATERING BUILDING	ST	- SEDIMENTATION TANK OUTLET
T103/A	- EXCESS SLUDGE PUMPS PIT	T112/A-B	- LAMELLA TANKS	B103	- BLOWER BUILDING		
T104	- FLOW DISTRIBUTION CHAMBER	T113/A-B	- MBBR TANKS	B104	- CHLORINE BUILDING	L01	- INTERNAL RECIRCULATION PIPE
T105	- RETURN ACTIVATED SLUDGE PUMPS PIT	T114	- DISTRIBUTION AND BY-PASS CHAMBER	B105	- ADMINISTRATION BUILDING	L02	- RETURN ACTIVATED SLUDGE PIPE
T106/A-B-C	- FINAL SED. TANKS	T115	- DECHLORINATION CHAMBER	B106	- HEATING BUILDING (EXISTING)		
T107/A	- CHLORINE CONTACT CHAMBER	T116/A	- SCUM CHAMBER	B107	- LABORATORY BUILDING (EXISTING)	ALL UNDERGROUND PIPES ARE HDPE , ABOVE GROUND STEEL PIPES ARE EITHER HOT DIP GALVANIZED OR STAINLESS STEEL.	
T108/A-B	- BIOLOGICAL REACTOR -1 (ANOXIC TANK-1)	T117	- EXISTING SLUDGE DRYING BEDS	B108	- TANKER DUMPING BUILDING		
T109/A-B	- BIOLOGICAL REACTOR -2 (AEROBIC TANK-1)	T118/A-B-C-D	- EFFLUENT STORAGE LAGOONS	B109	- TRANSFORMER AND GENERATOR BUILDING		

0m 205m 40m 60m 80m

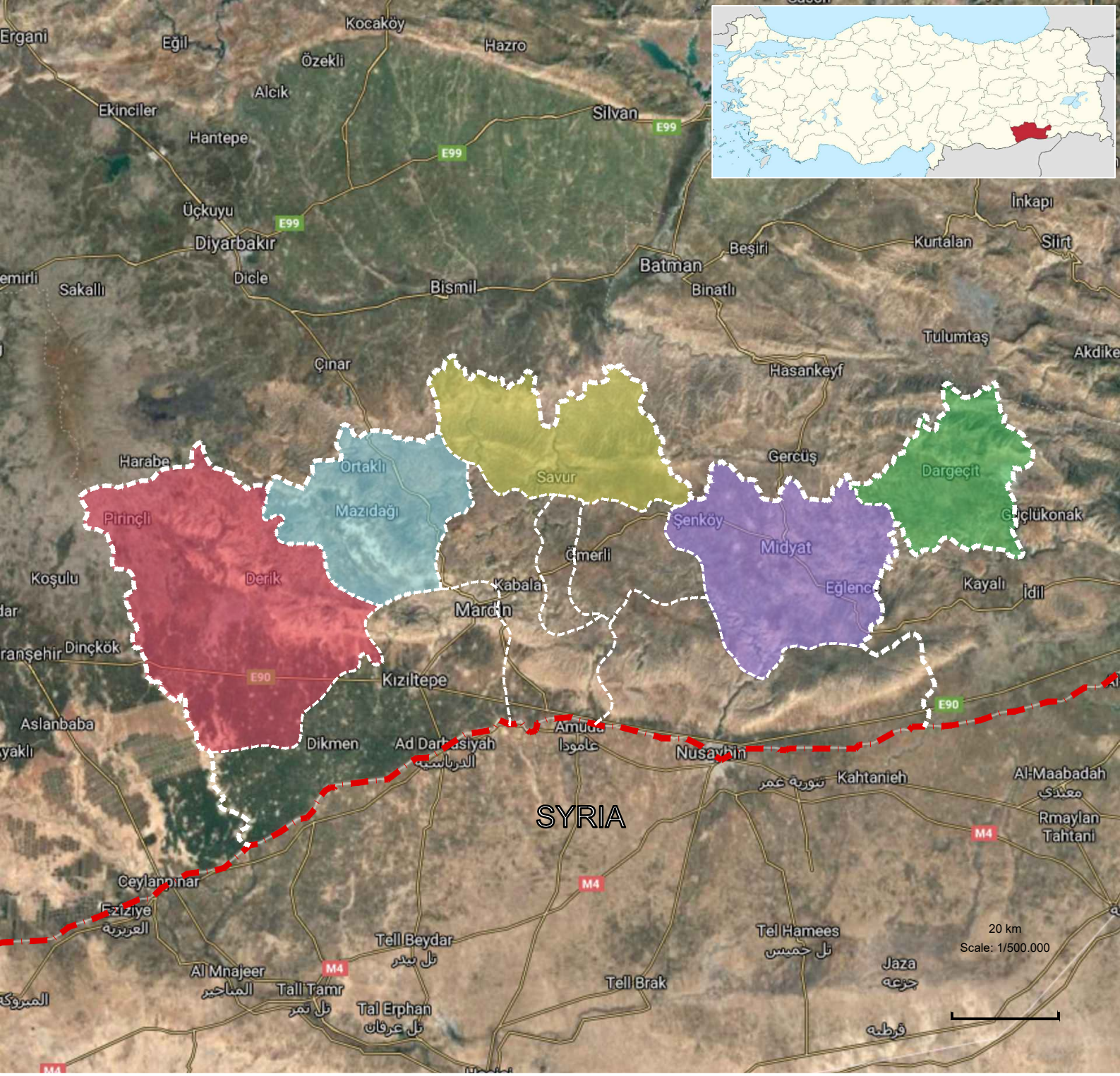


MUDURNU (BOLU)
WASTEWATER TREATMENT PLANT PROJECT

NOTATION

T 101	COARSE SCREENS CHANNEL	T 104	FINE SCREENS CHANNEL	T 107/A-B	AERATION TANK	T 110	EXCESS SLUDGE PUMP CHAMBER
T 102	INLET PUMP STATION	T 105	AERATED GRIT AND GREASE CHAMBER	T 108	DISTRIBUTION CHAMBER-2		
T 103	FLOWMETER CHAMBER	T 106	DISTRIBUTION CHAMBER-1	T 109/A-B	SEDIMENTATION TANK	B 101	GUARD HOUSE, WORKSHOP, BLOWER and SLUDGE DEWATERING BUILDING

0m 5m 10m 15m 20m

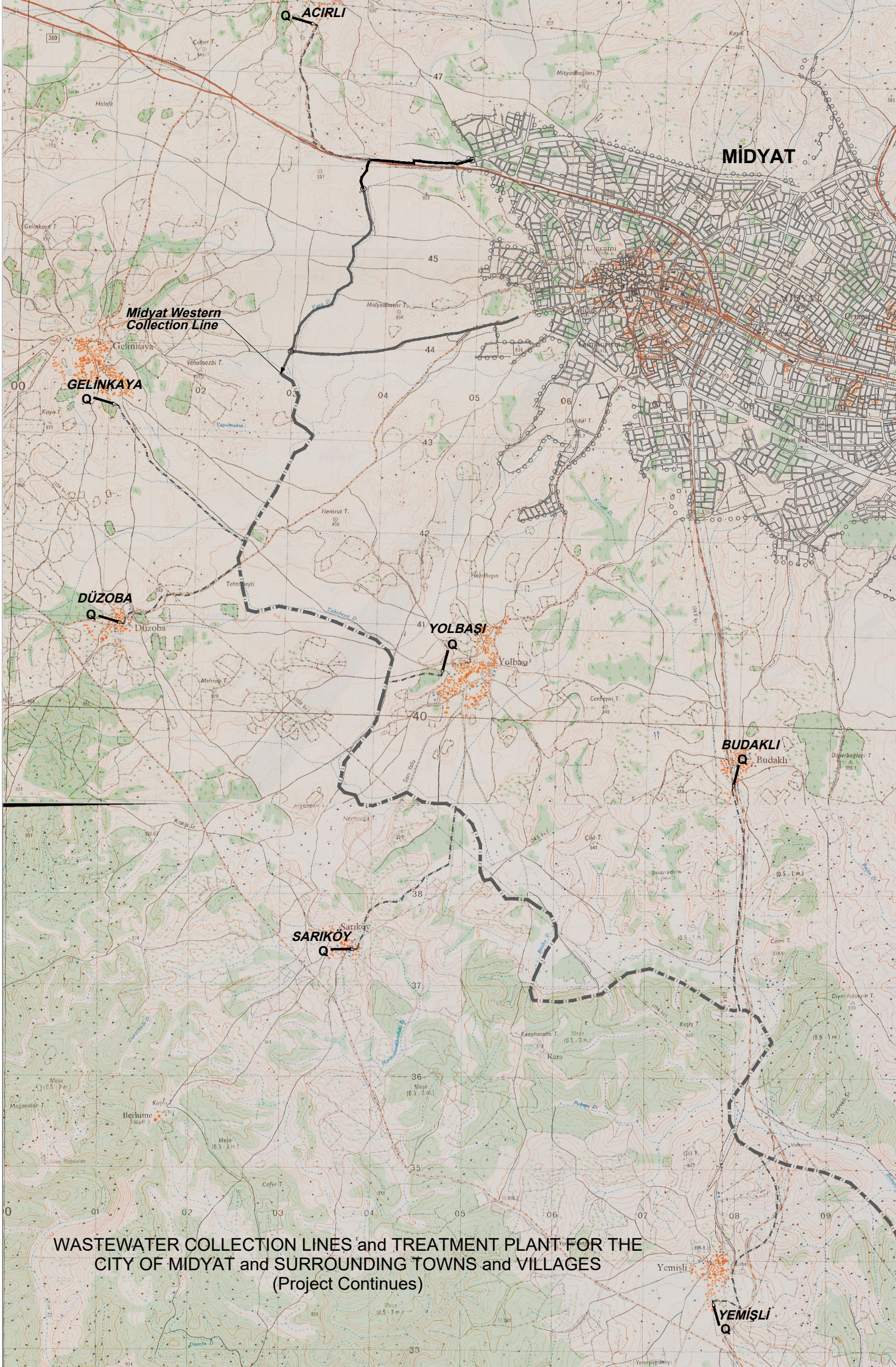


WASTEWATER COLLECTION LINES and TREATMENT PLANTS FOR
5 TOWNS AND CITIES IN THE PROVINCE OF MARDIN
(Project Continues)

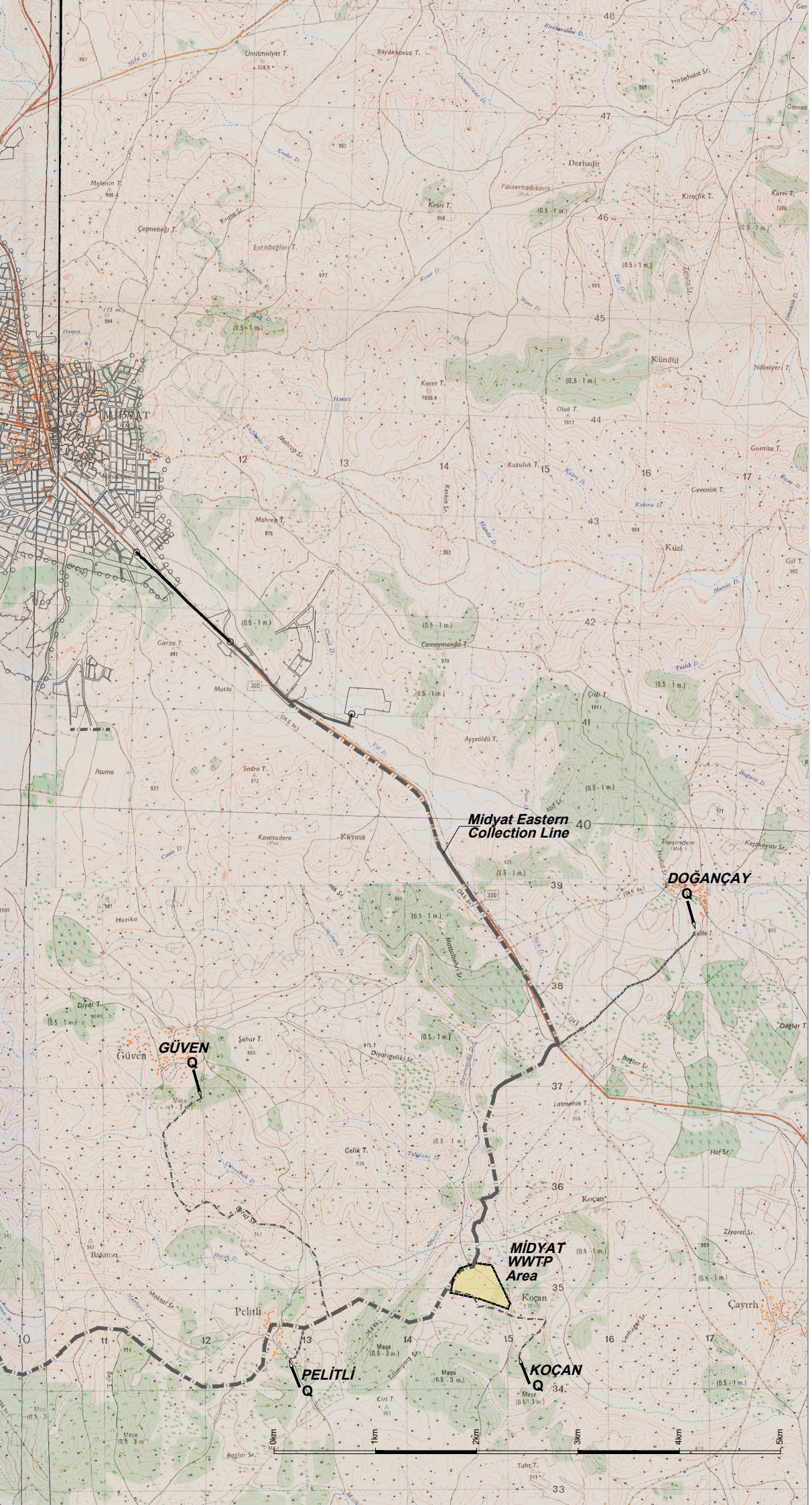
The Project includes 5 towns and cities (Derik, Mazıdağı, Savur, Midyat, Dargeçit) with surrounding villages.

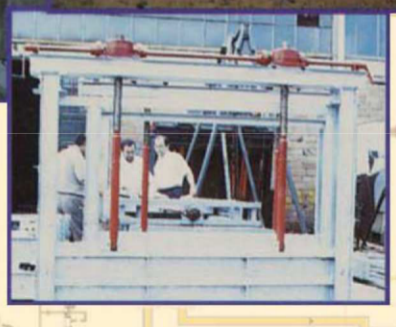
The scope is:

- Future population and water consuption estimates.
- Preparation of feasibility reports.
- Geological and topographical surveys.
- Detail design of collection lines and treatment plants.
- Design of solar energy systems for the treatment plants.



WASTEWATER COLLECTION LINES and TREATMENT PLANT FOR THE CITY OF MIDYAT and SURROUNDING TOWNS and VILLAGES
(Project Continues)


N
Midyat Eastern Collection Line
DOĞANÇAY
GÜVEN
MİDYAT WWTP Area
PELİTLİ
KOÇAN
0km
1km
2km
3km
4km
5km



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