6.2 WWTP of Carcass Disposal Plant in Oberding (Germany)

This WWTP purifies the effluent water of the carcass disposal plant in Oberding, Germany. The plant consists of mechanical, physic-chemical and biological treatment steps.

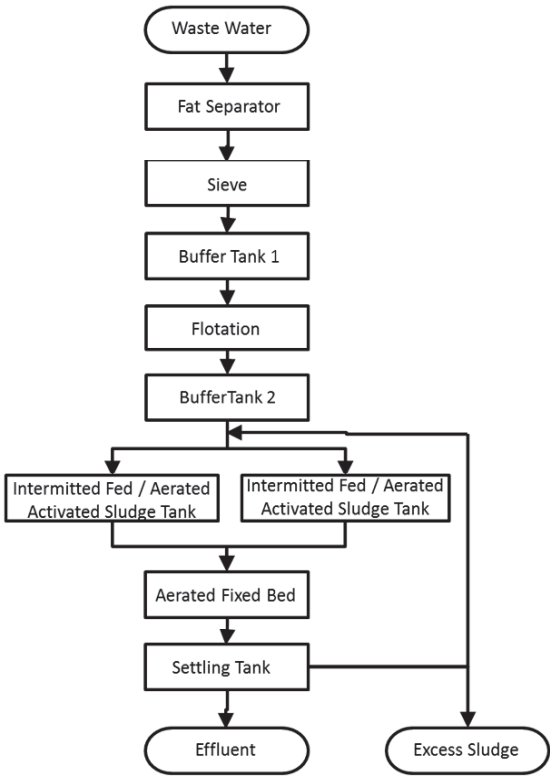
Process Description of Biological Treatment:

The biological treatment of this WWTP is designed as an activated sludge system with intermitted nitrification / denitrification in two parallel operated tanks followed by an aerobic fixed film reactor. A downstream located settling tank removes the sludge from the effluent.

The waste water is fed intermittingly to one of the two activated sludge tanks with a volume of 1,360 m³ each (total 2,720 m³). The tanks are equipped with mixers to provide proper mixing during anoxic periods. Online-measurement of NH_4^+-N and NO_3^--N controls the anoxic or aerated periods.

A cascade of two settling tanks separates the solids from the effluent. The segregated solids are either recycled into the activated sludge tank or discharged.

Block diagram:



Design Data:

Feed	Volume	[m³/d]	240
	COD	[kg/d]	2,450
	TKN	[kg/d]	330

Operation Data:

Effluent	COD	[g/m³]	< 150
	TKN	[g/m³]	< 50

6.3 WWTP of Carcass Disposal Plant in Lyss, Switzerland

This WWTP purifies the effluent water of the GZM Extraktionswerk AG in Lyss, Switzerland. The plant consists of mechanical, physic-chemical and biological treatment steps.

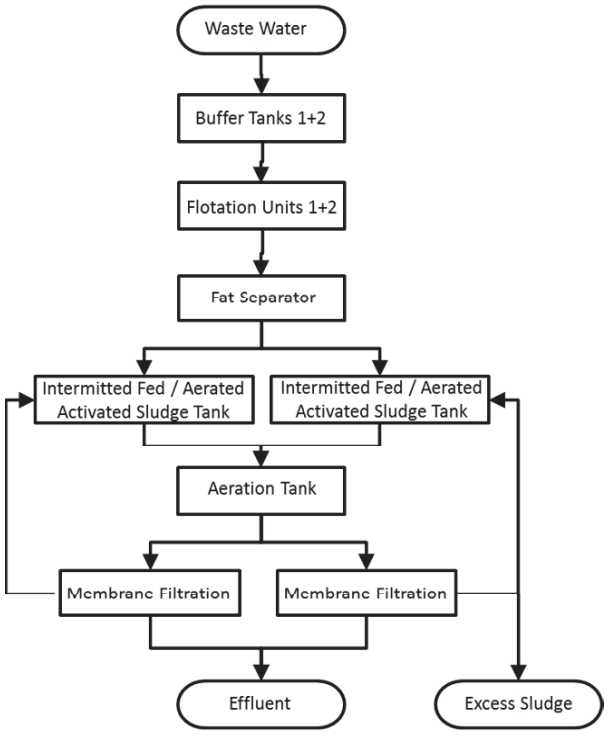
Process Description of Biological Treatment:

The biological treatment of this WWTP is designed as an activated sludge system with intermitted nitrification / denitrification in two parallel operated tanks followed by an aeration tank. Two downstream located membrane filtration units which are operated in a parallel mode remove the solids from the effluent.

The waste water is fed intermittingly to one of the two activated sludge tanks with a volume of 1,330 m³ each (total 2,660 m³). The tanks are equipped with mixers to provide proper mixing during anoxic periods. Online-measurement of NH_4^+-N and NO_3^--N controls the anoxic or aerated periods. The downstream located aeration tank has a volume of 100 m³.

Two parallel operated membrane filtration units separate the solids from the effluent. The segregated solids are either recycled into the activated sludge tank or discharged.

Block diagram:



Design Data:

Feed	Volume	[m³/d]	528
	COD	[kg/d]	2,400
	TKN	[kg/d]	420

Operation Data:

Effluent	COD	[g/m³]	25 - 35
	TKN	[g/m³]	5 - 15

6.4 List of Other References

WWTP of carcass disposal plant Plattling, Germany

WWTP of carcass disposal plant Kraftisried, Germany

WWTP of biowaste digestion plant Kirchstockach, Germany

WWTP of biowaste digestion plant Dietrichsdorf, Germany

7. List of Annex

Annex A: Drawings

Annex B: Technical Specifications

Pfaffenhofen, 19. Mai 2014

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Senior Process Engineer
BTA International GmbH

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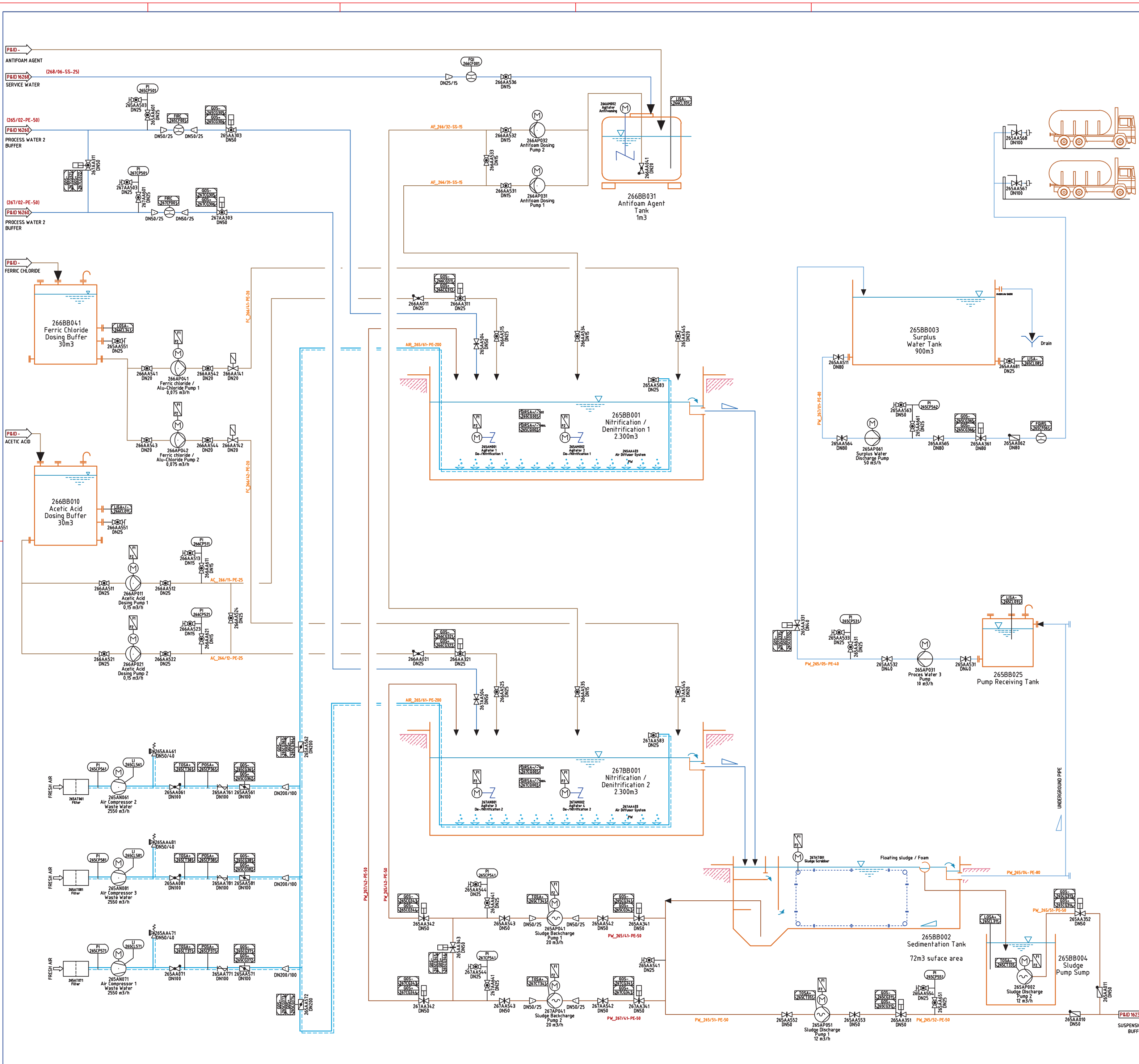
Annex A
Northern Malta Project
Drawings

General Index



NOTE:

-The piping dimensions are not yet specified

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PRELIMINARY

Rev.	Description	Date	Executed	Verified	Approved	Status
E	...	...	...	...	...	...
D	...	...	...	...	...	...
C	...	...	...	...	...	...
B	...	...	...	...	...	...
A	GENERAL ARREGEMENT	31.03.2014	AS	...	...	...

PROJECT:

NORTHERN MALTA

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CONSORTIUM:

B. E. V. CONSORTIUM - CT3016

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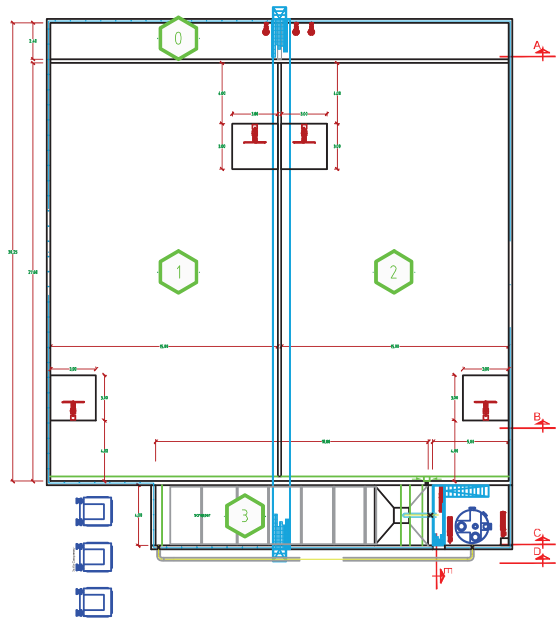

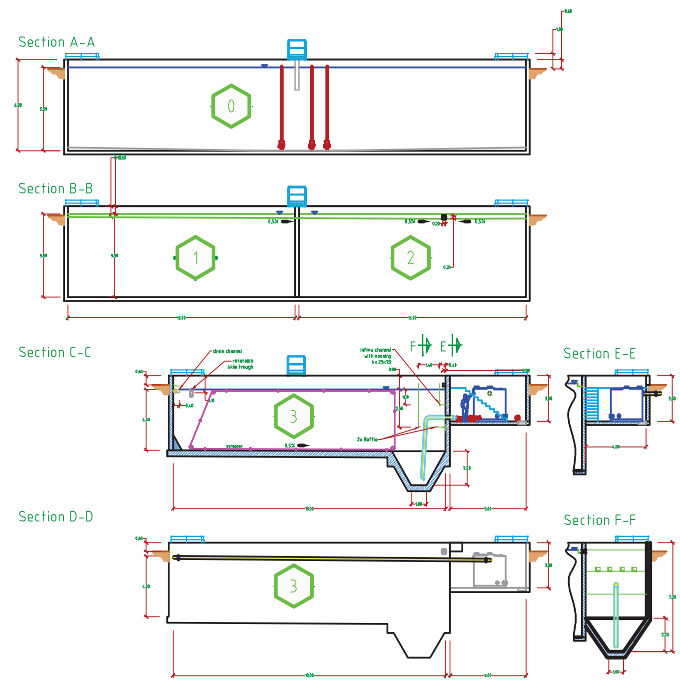

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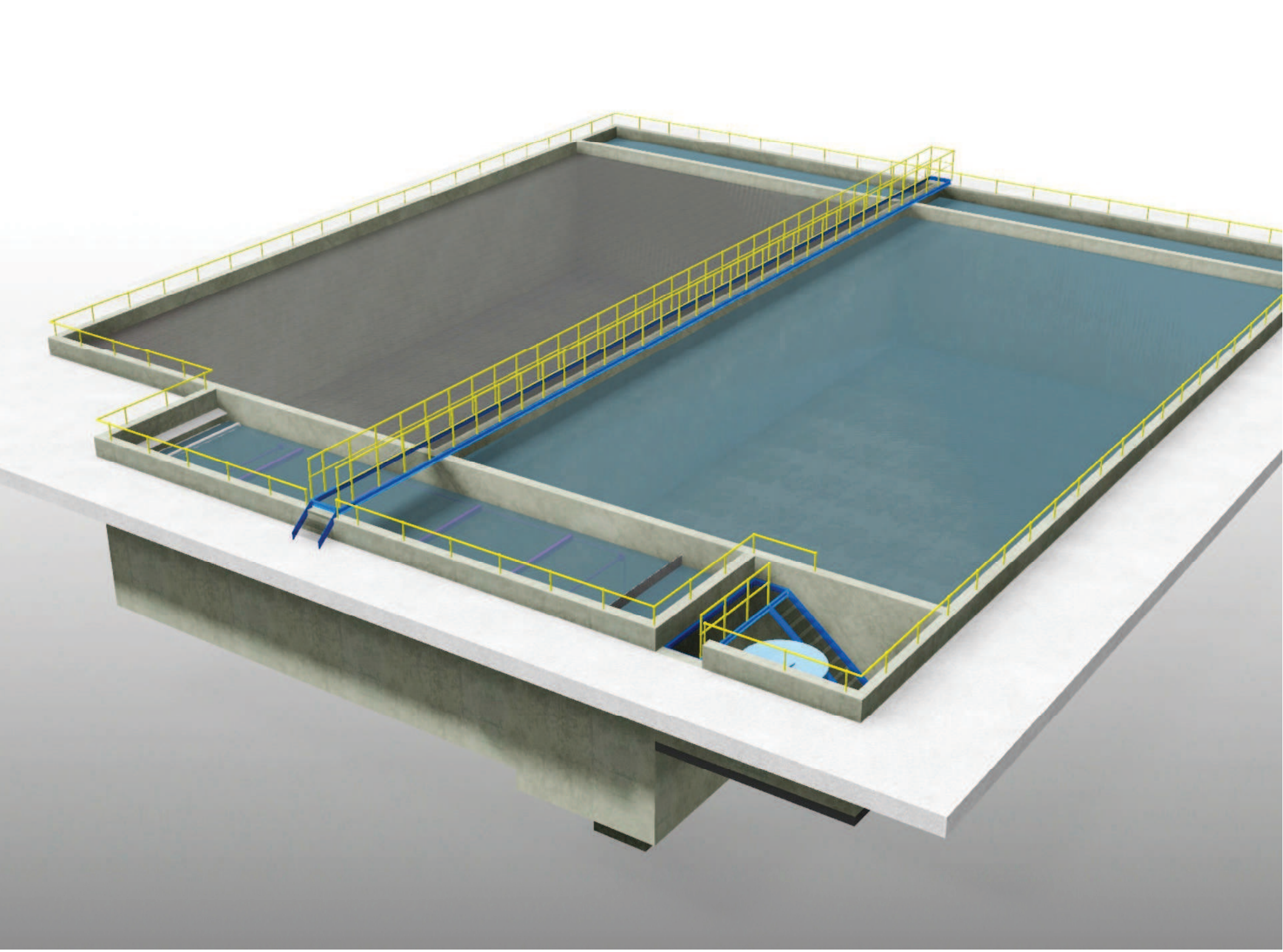

Annex B
Northern Malta Project
Technical Specification

General Index