



HYDROUSA

H2020-CIRC-2-2017

Water in the context of circular economy

Full project title:

Demonstration of water loops with innovative regenerative business models for the Mediterranean region

Deliverable: D17

Relative Number in WP3: D3.4

Constructed wetland installed and operating

Annex 1

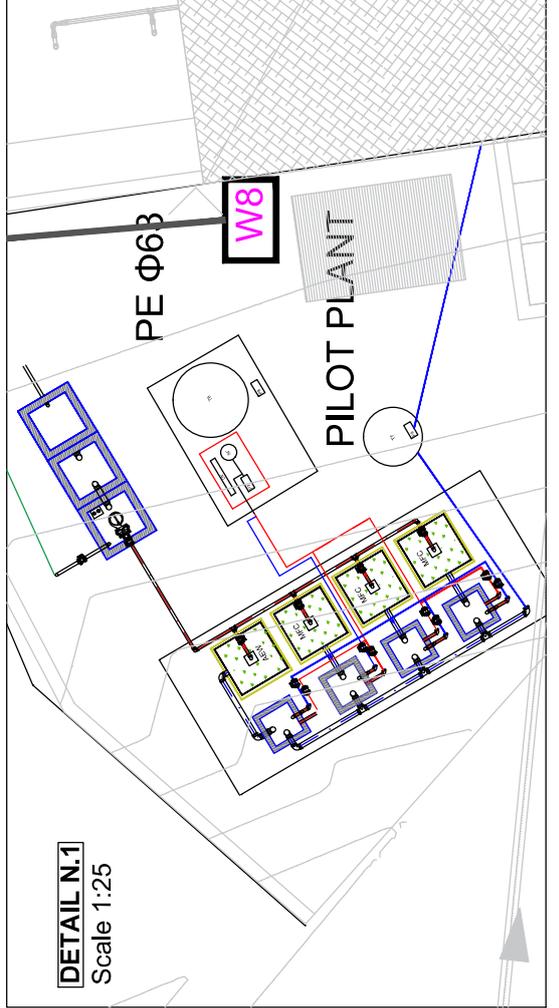
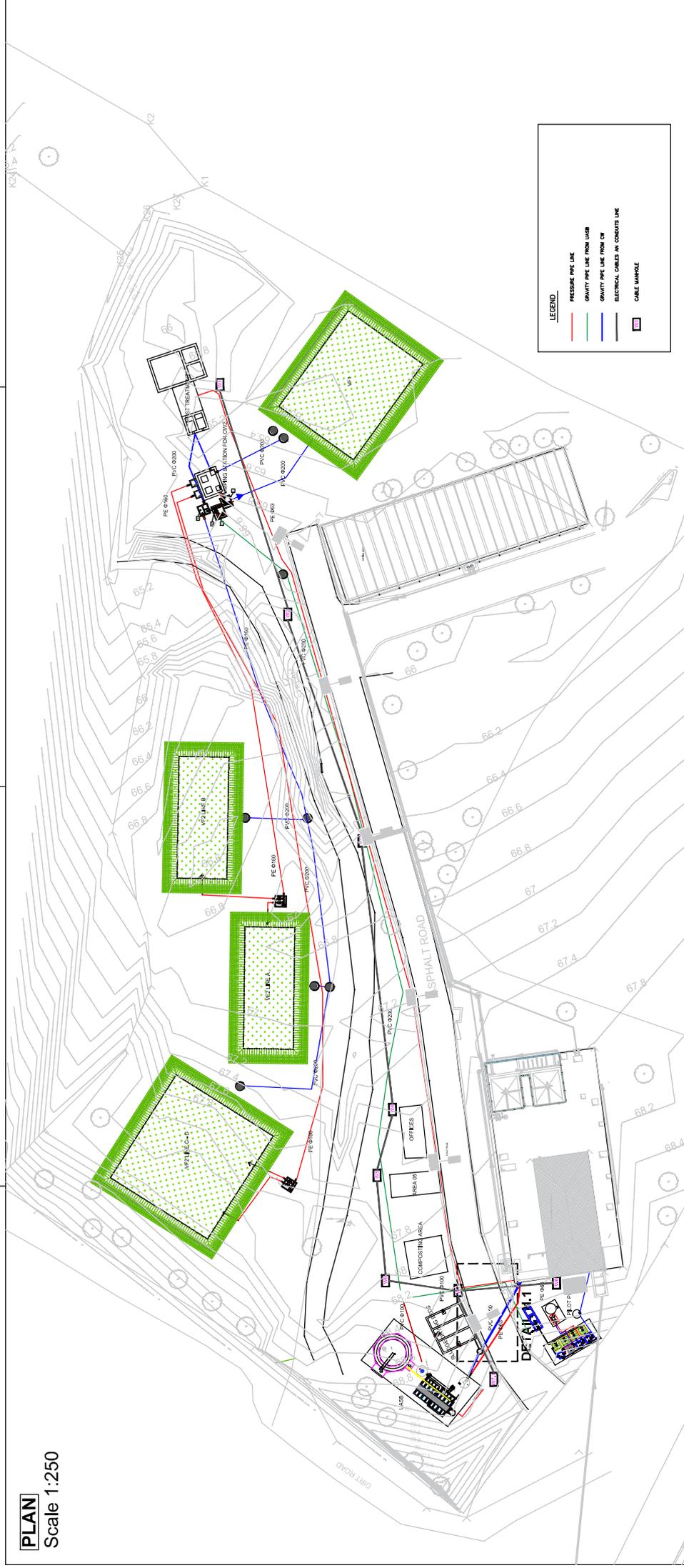
As built drawings

Due date of deliverable: June 30th, 2020

Submission date of revised deliverable: March 12th, 2024



PLAN
Scale 1:250



Leivos (Greek)

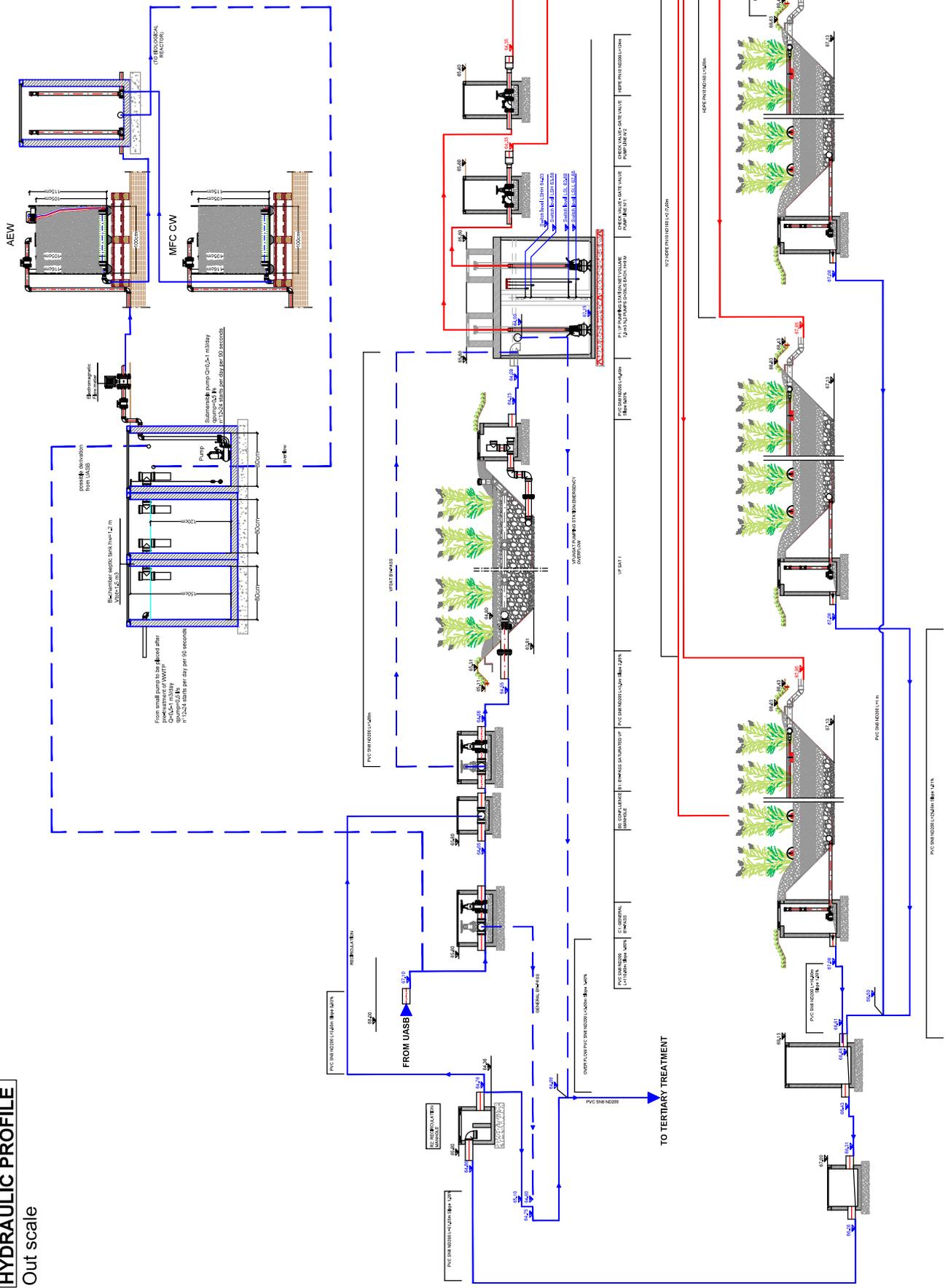
HYDROUSA - D3.2
As Built Constructed Wellhead



Elaborated by: Eleni Broussas Engineer	Scale: 1:250
Reviewed by: Fakos Maniatis	Drawing n°: 1.1
Date: June 2021	Project: HydroUSA - D3.2

HYDRAULIC PROFILE

Out scale



Lesvos (Greck)

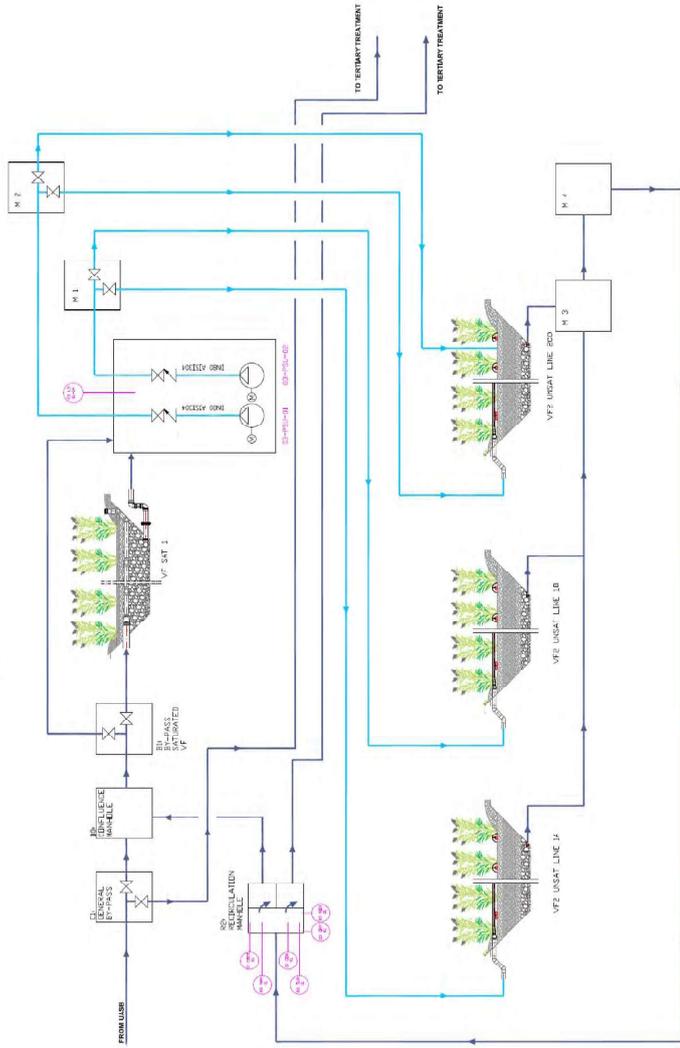
HYDROUSA - D3.2
As Built Constructed Wetland

Issue: 01/2021
Drawing: No 2.1

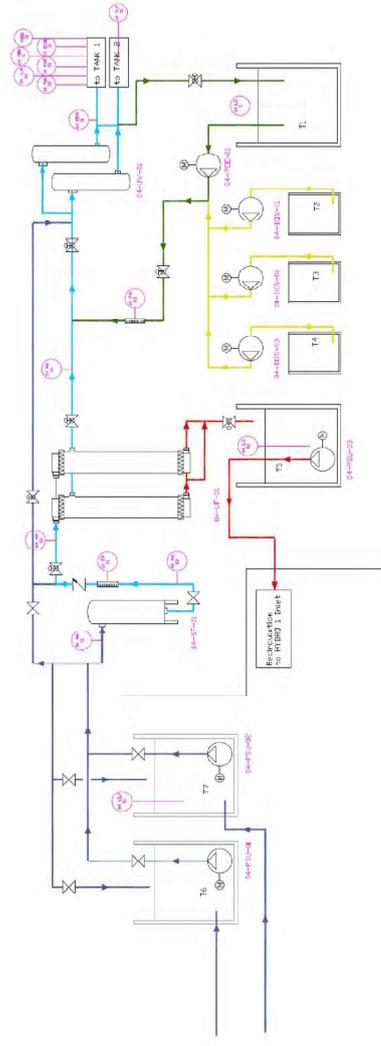
IRIDRA
International Research Institute for Development and Rehabilitation of Agricultural and Rural Infrastructure
Tel: 00357 25221 - www.iridra.com

Engineer: Fotios Moutafis
Reviewed by: Fotios Moutafis
Scale: 1:1000

AREA 03: CONSTRUCTED WETLANDS UNIT

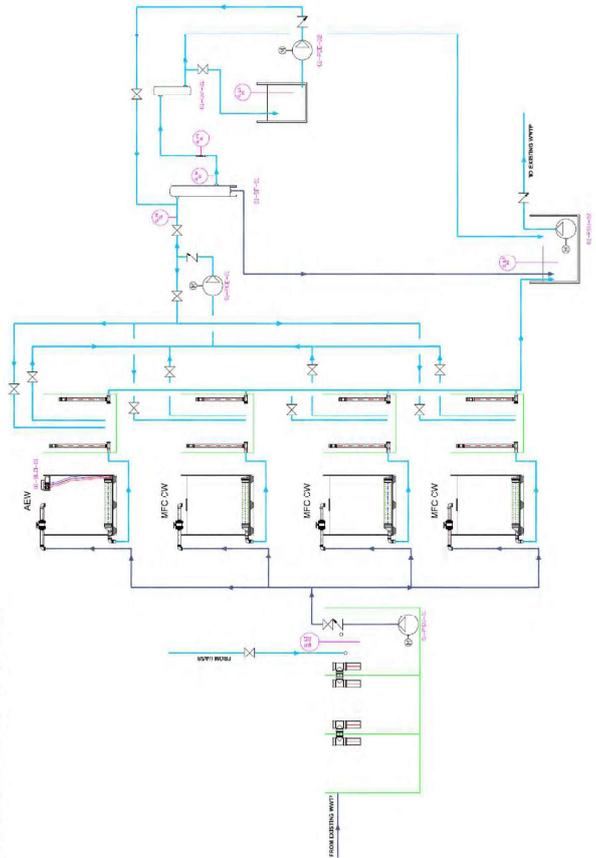


AREA 04: POST-TREATMENT UNIT



P&ID
Out scale

AREA 01: PILOT SYSTEMS



LEGEND:

- T Tank
- FM Flow meter
- EFM Electromagnetic flow meter
- ESM Electronic flow meter
- M Motor
- LS Level Sensor
- ULM Ultrasonic level meter
- LS Level Switch
- ZS Position Switch
- TT Temperature Transmitter
- PT Pressure Transmitter
- HS High level transmitter
- GA Gas Analyzer
- GD Gas Detector
- MV Motorized Valve
- PV Pneumatic Valve
- PU Pump
- GC Gas Compressor
- CH Water Chiller
- EH Electric Heater
- EF Exhaust Fan
- X Manual Valve
- AO Automatic Valve
- MI Manual Ball Valve
- N Non Return Valve
- F Pump
- Biogas Line
- Sludge Line
- Untreated Line
- Treated Line
- Recirculation Line
- Reagents Line
- Exhaust Line

Lesvos (Greece)

HYDROUSA - D3.2
At Balli Commanded Wetland

Rev. 2
20/01/2021

Rev. 1
18/01/2021

Rev. 0
18/01/2021

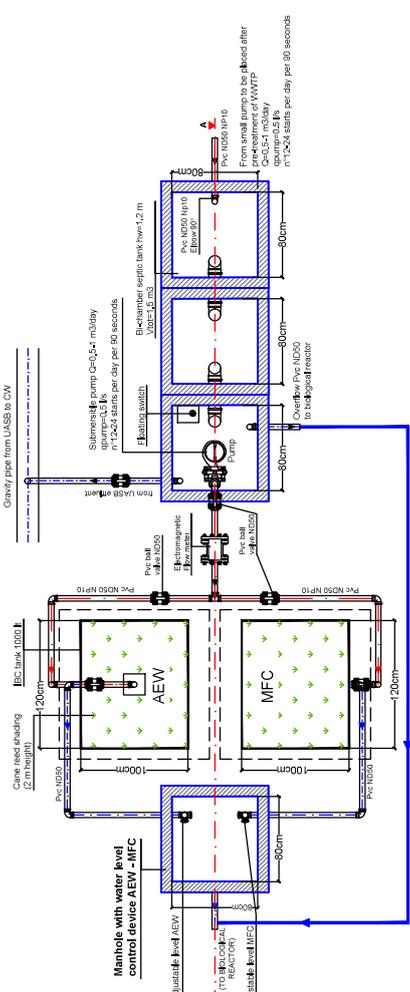
Drawing No. 2.1

Scale
1:100

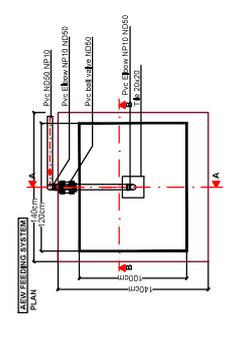
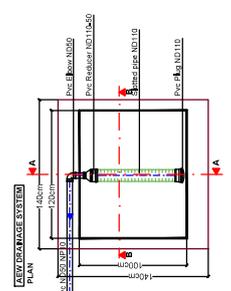
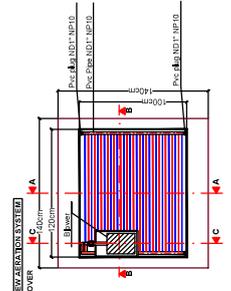
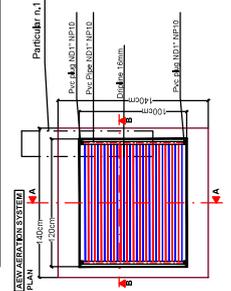
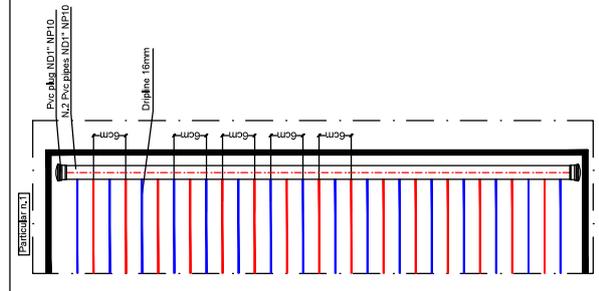
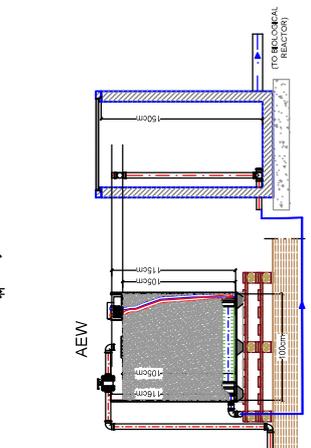
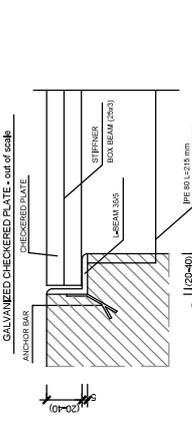
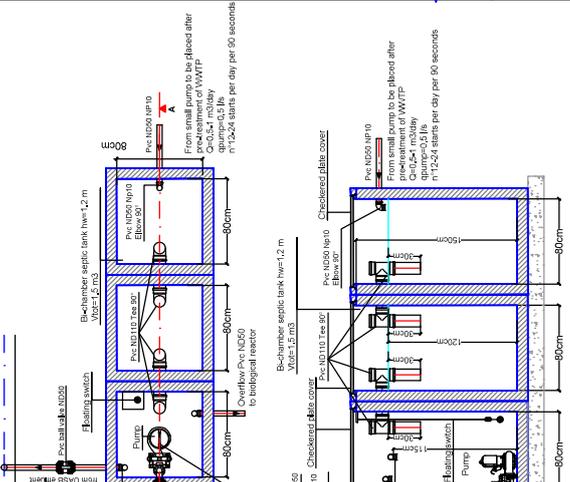
Rev. 0
18/01/2021

Engineer
Fotios Mout

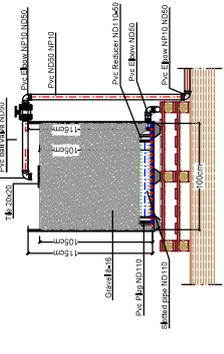
PLAN
Scale 1:25



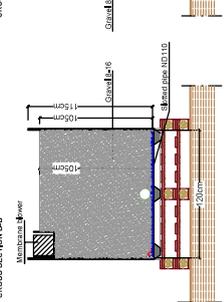
Scale tank and pumping station
Scale 1:25



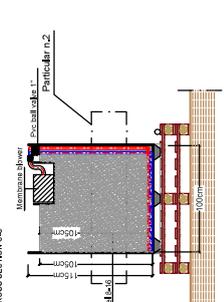
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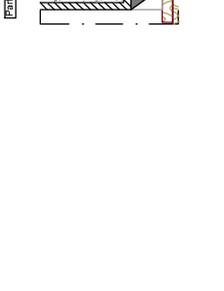
CROSS SECTION B-B



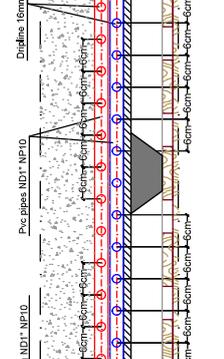
CROSS SECTION C-C



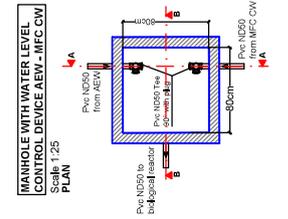
CROSS SECTION D-D



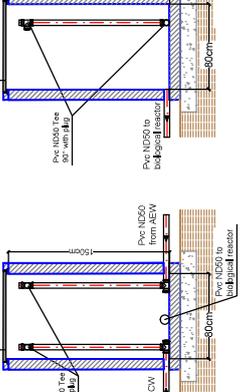
CROSS SECTION E-E



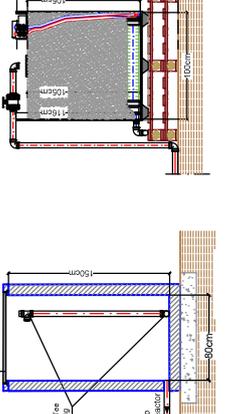
MANHOLE WITH WATER LEVEL CONTROL DEVICE AEW - MFC CW
Scale 1:25



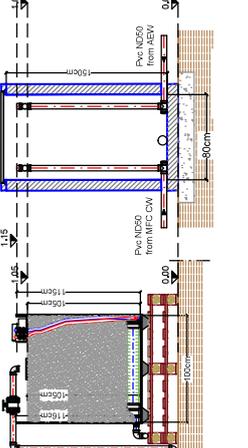
CROSS SECTION I-A-A



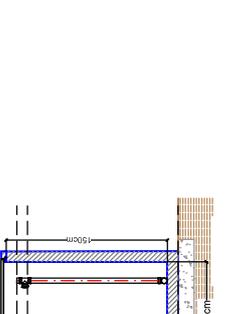
CROSS SECTION B-B



CROSS SECTION C-C



CROSS SECTION D-D

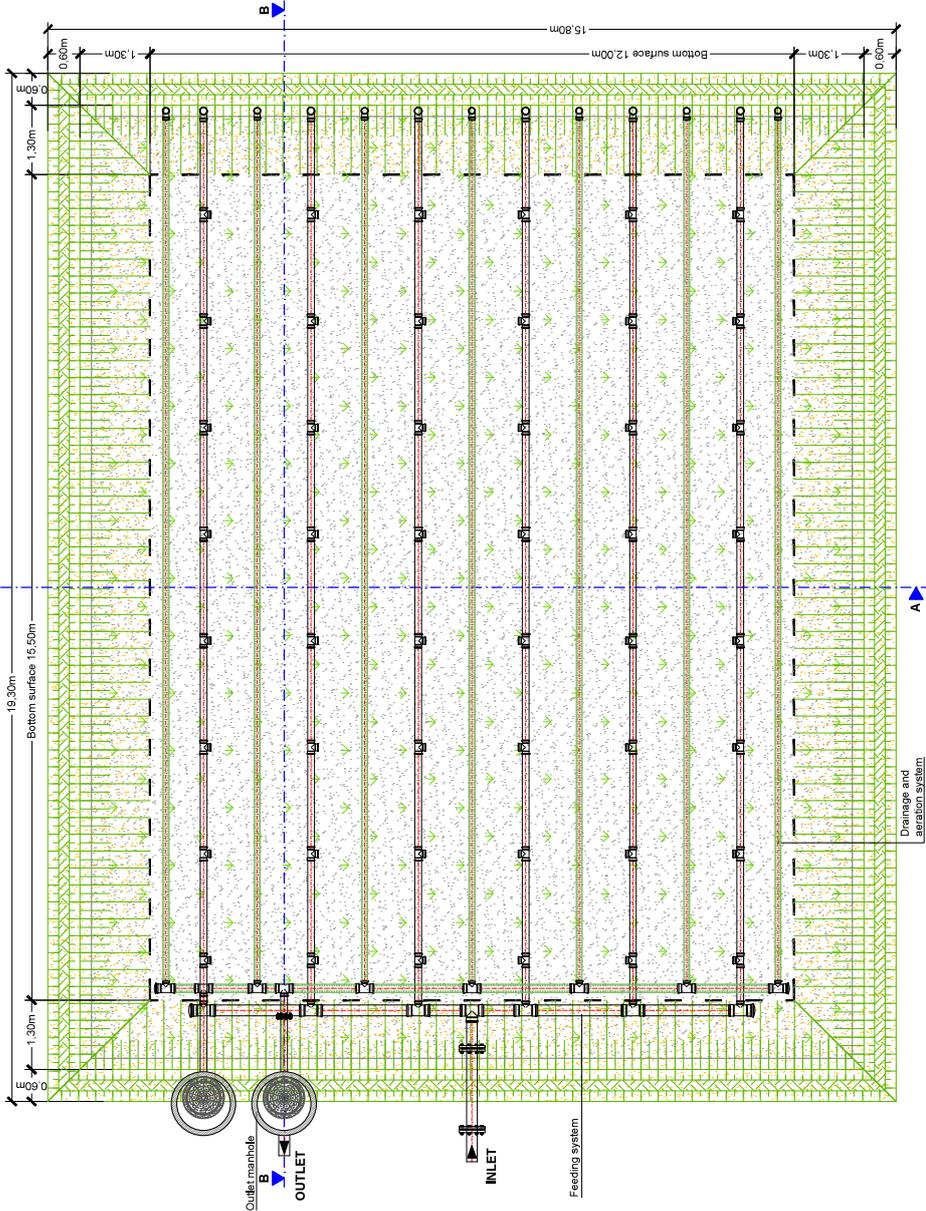


Leovus (Greece)

HYDROUSA - D3.2
As Built Construction Walled

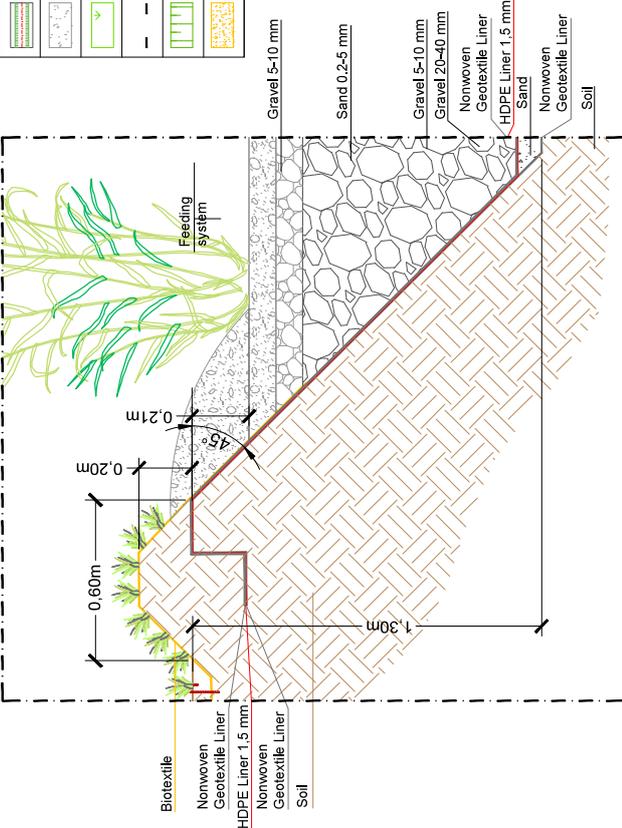
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Drawing no: 3

PLAN - VF1 SAT
Scale 1:50



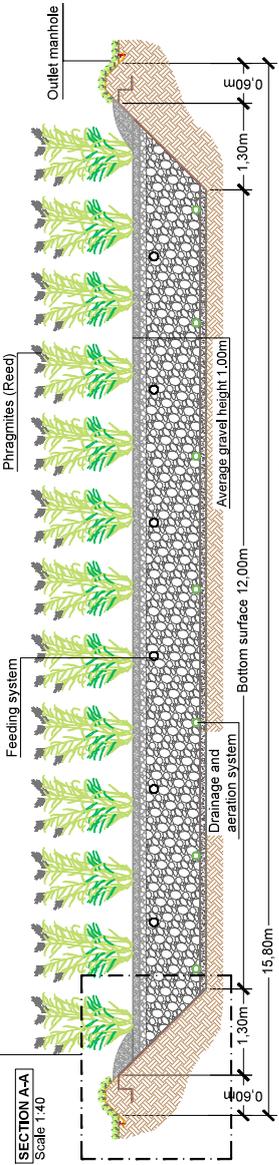
LEGEND VF PLAN	
	Drainage system
	Bed media
	Phragmites australis
	Bottom bed
	Banks
	Biorefill

DETAIL ZOOM
Scale 1:10

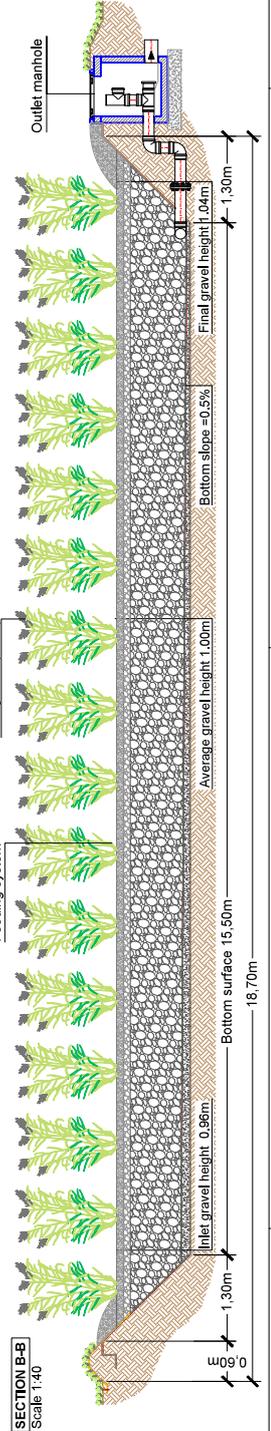


Heights and types Aggregates	
10cm	Gravel 5-10 mm
10cm	Gravel 10-20 mm
80cm	Gravel 30-50 mm
Average medium depth 1.00 m	

SECTION A-A
Scale 1:40



SECTION B-B
Scale 1:40



Lesvos (Greck)

HYDROUSA - D3.2
As built constructed wetland

№ 2
January 2021
VF1 SAT - plan and section

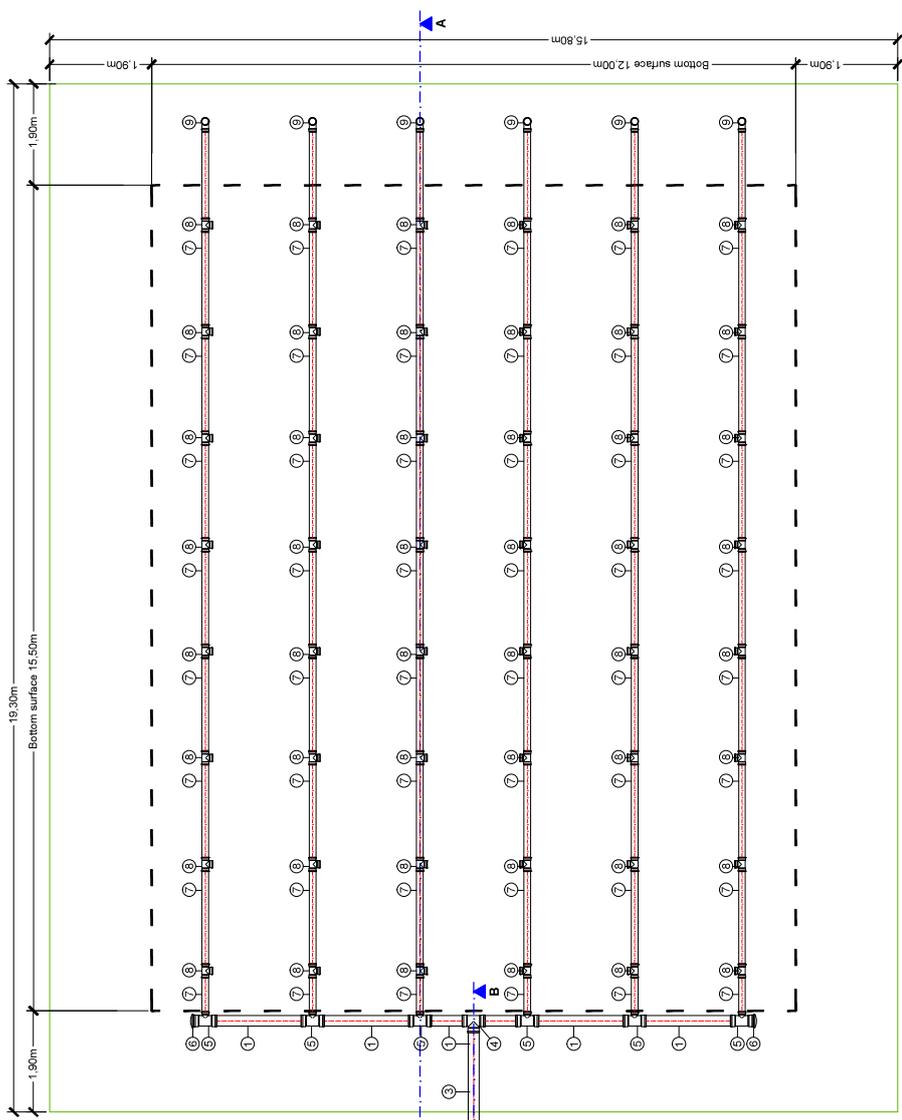
Scale:
Systems

Supervision:
Fotios Mout

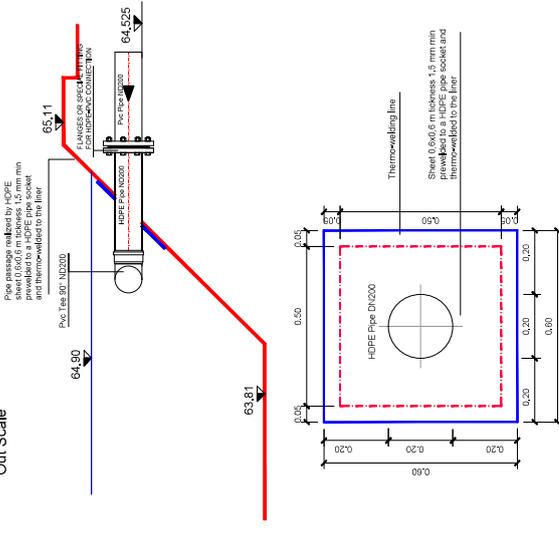
Illustrated by:
Irene Filipidou



FEEDING SYSTEM - VFI SAT
Scale 1:50

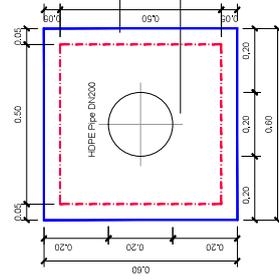


VF 1 SAT - INLET
Out Scale

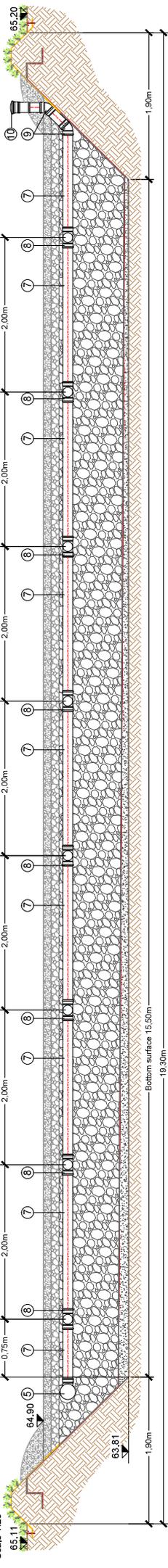


LEGEND

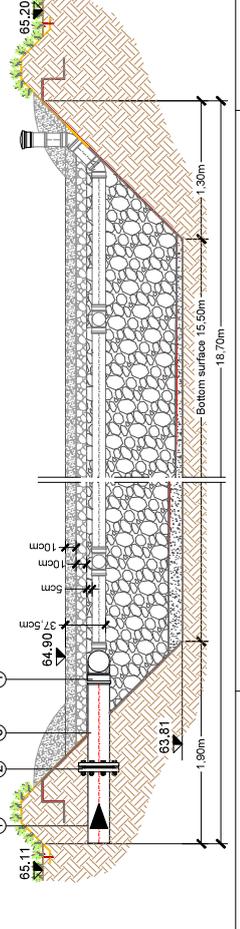
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②	Flanges for HDPE-Pvc transition ND200
③	Flang ND200 Pvc10
④	Pvc Plug ND200
⑤	Pvc Tee 90° ND200
⑥	Pvc reducer Tee 90° ND200x125
⑦	Pvc Plug ND200
⑧	Pvc ND125
⑨	Pvc Tee 90° ND125
⑩	Pvc Elbow 45° ND125
⑪	PVC screw Plug DN125



SECTION A-A
Scale 1:25



SECTION B-B
Scale 1:25



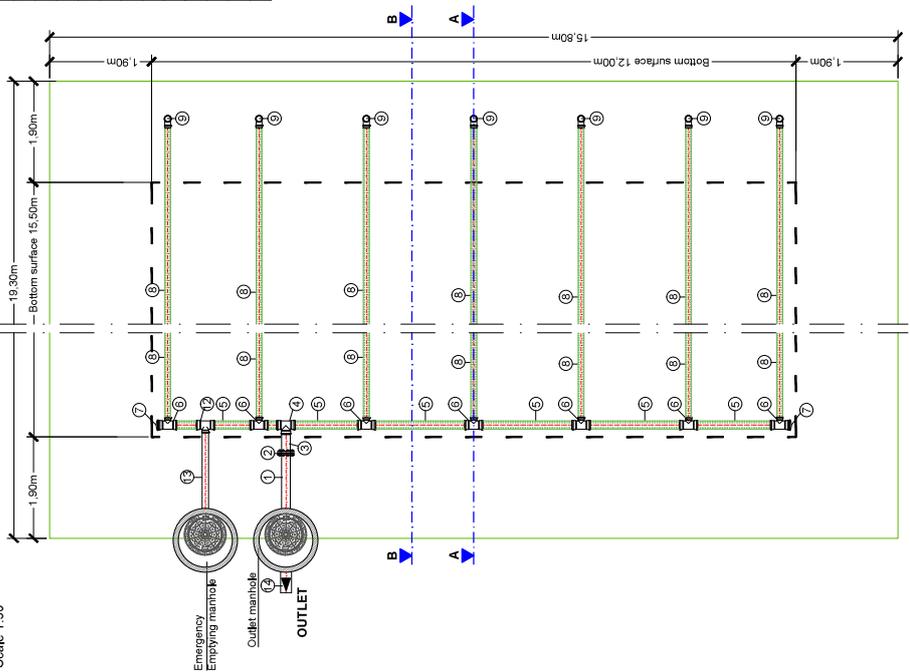
Lesvos (Greece)

HYDROUSA - D3.2
As Built constructed walland

HydroUSA Engineering S.p.A.
Via S. Maria Maddalena, 10
05045 - 05045 - 05045

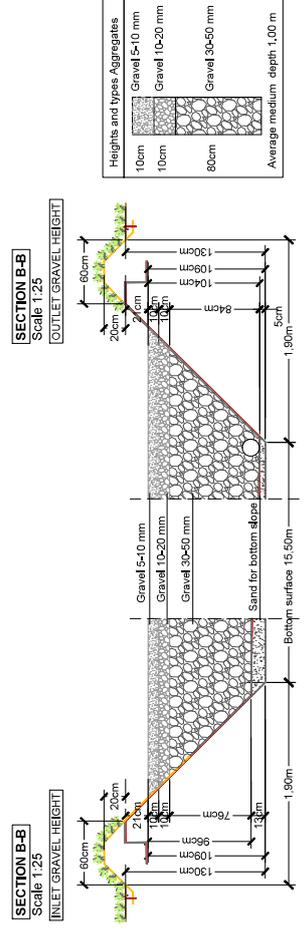
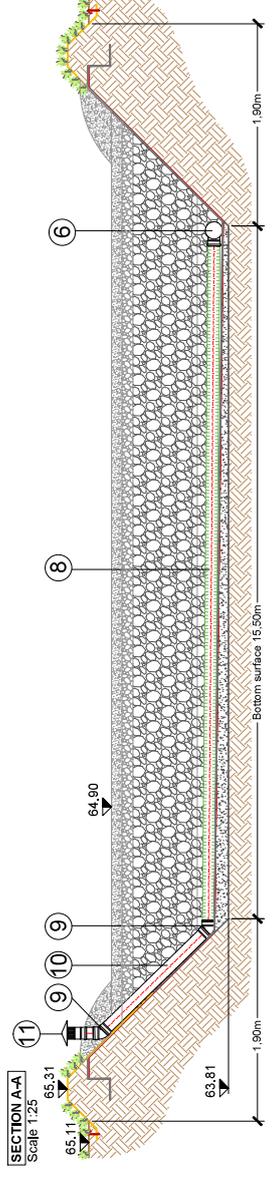
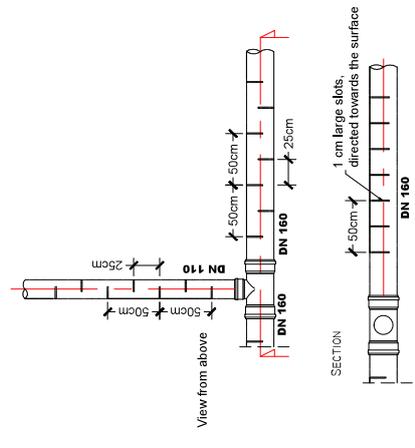
Supervisor:
Project Manager:
Scale:
Status:
Drawing no.4.2
Date:
Project: VF 1 SAT - Feeding system

DRAINAGE AND AERATION SYSTEM - VFI SAT
Scale 1:50



LEGEND

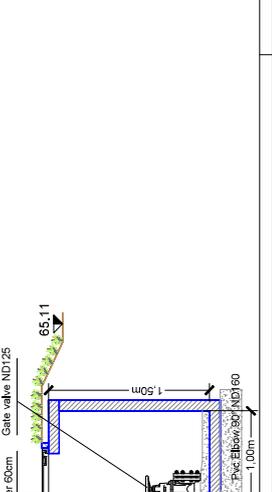
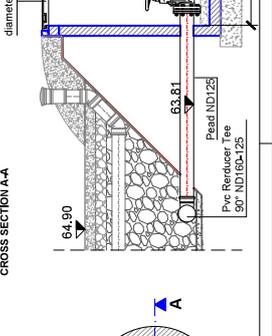
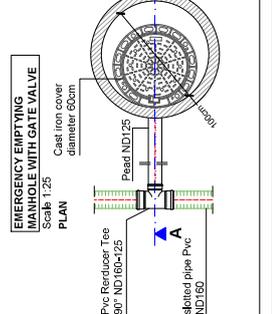
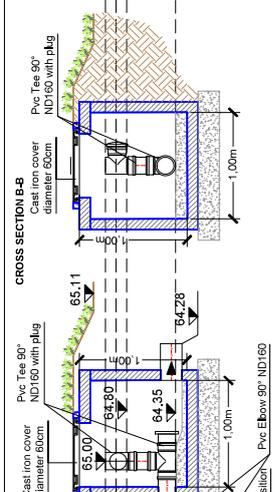
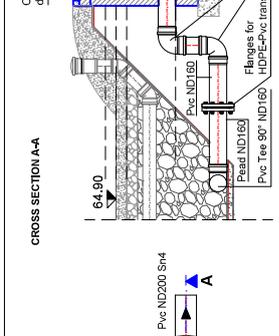
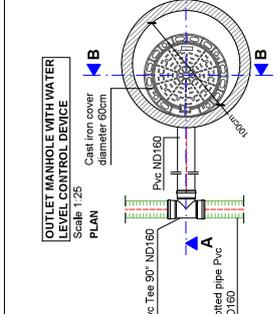
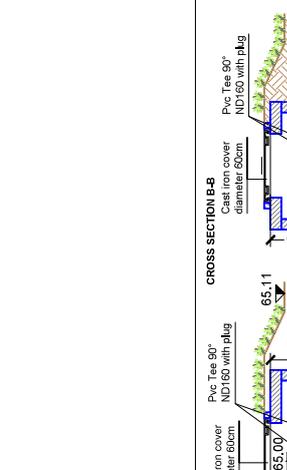
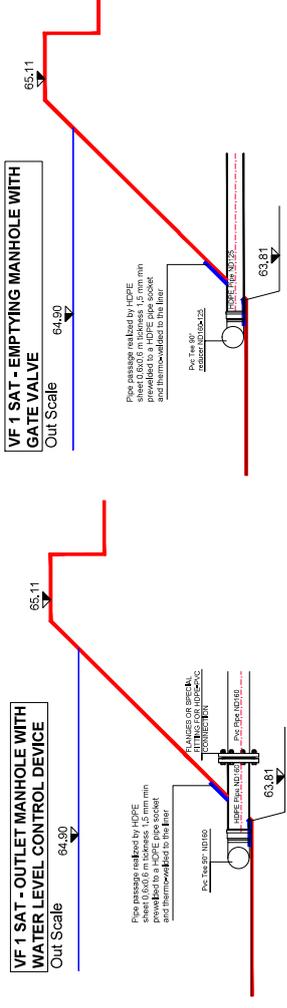
①	Pvc ND160 Sh4
②	Flanges for HDPE-Pvc transition ND160
③	Pvc ND160
④	Pvc Tee 90° ND160
⑤	Pvc slotted ND160
⑥	Pvc reducer Tee 80° ND160-110
⑦	Pvc Plug ND160
⑧	Pvc slotted ND110
⑨	Pvc elbow 45° ND110
⑩	Pvc ND110 Sh4
⑪	Chimney ND110
⑫	Pvc reducer Tee 80° ND160-125
⑬	Pvc ND125 Sh4



Heights and types Aggregates

Gravel 5-10 mm	10cm
Gravel 10-20 mm	10cm
Gravel 30-50 mm	80cm
Average medium depth 1,00 m	

VF 1 SAT - EMPTING MANHOLE WITH GATE VALVE
Out Scale



HYDROUSA - D3.2
All built constructed as indicated

LESVOS (Cretek)

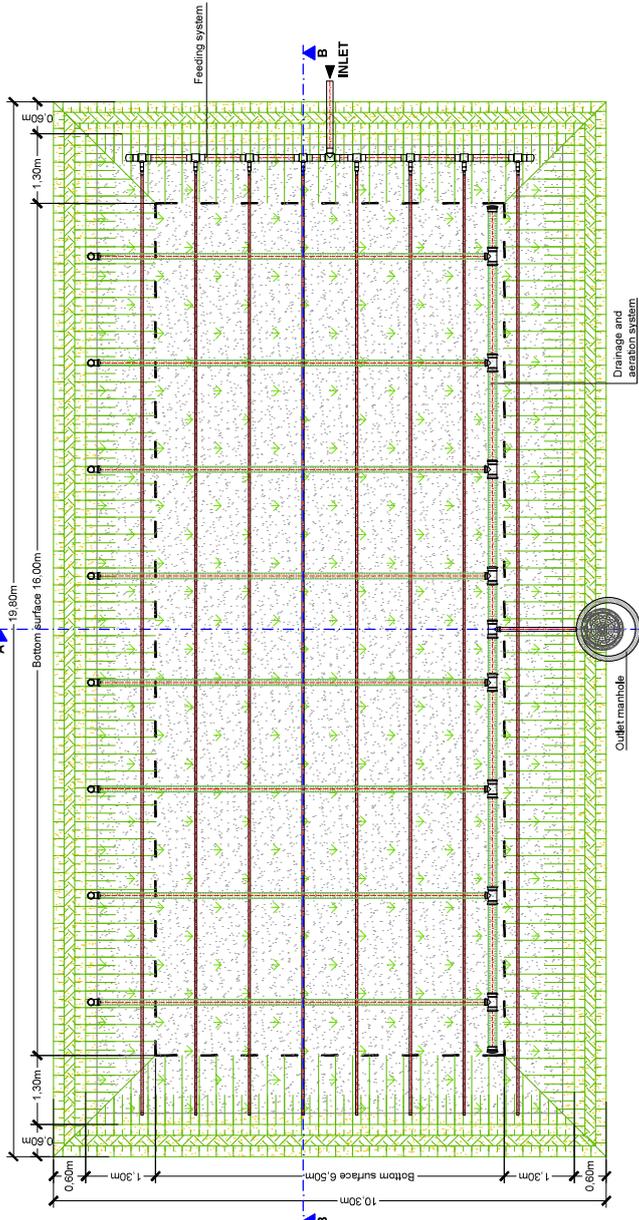
HydroUSA
Vasiliki, Lesvos, Greece
Tel: +354 9722 74 00
Fax: +354 9722 74 00

Elaborated by: **HydroUSA**
Project Manager: **HydroUSA**
Supervisor: **HydroUSA**
Author: **HydroUSA**

Scale: **As shown**
Drawing No: **D3.2**
Date: **January 2021**

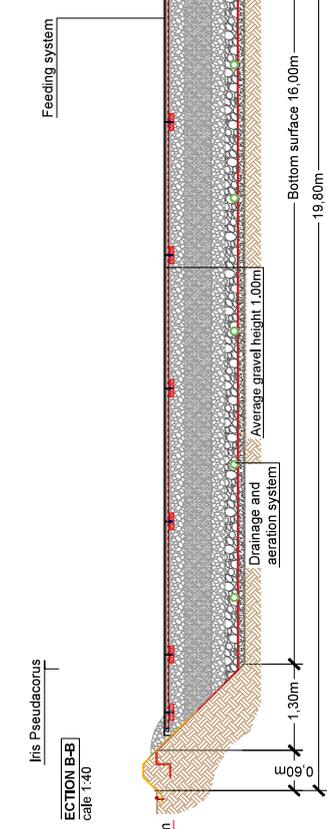
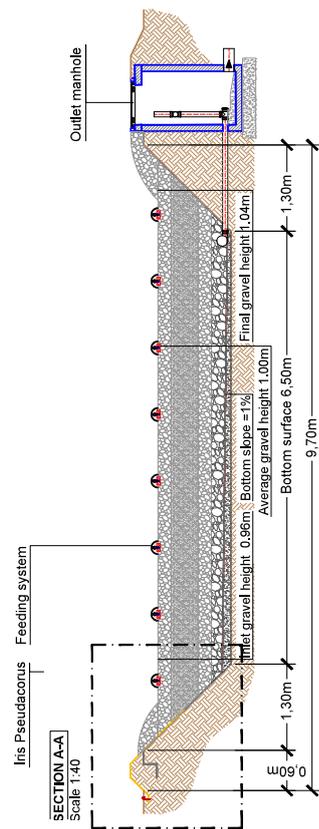
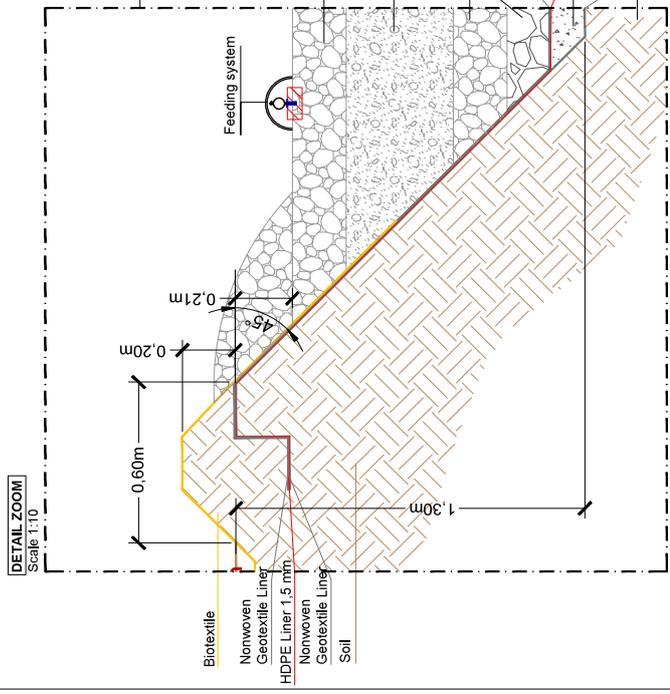
PLAN - VF2 UNSAT - LINE A
Scale 1:50

LEGEND VF PLAN	
	Drainage system
	Bed media
	Iris Pseudocorus
	Bottom bed
	Banks
	Biotextile

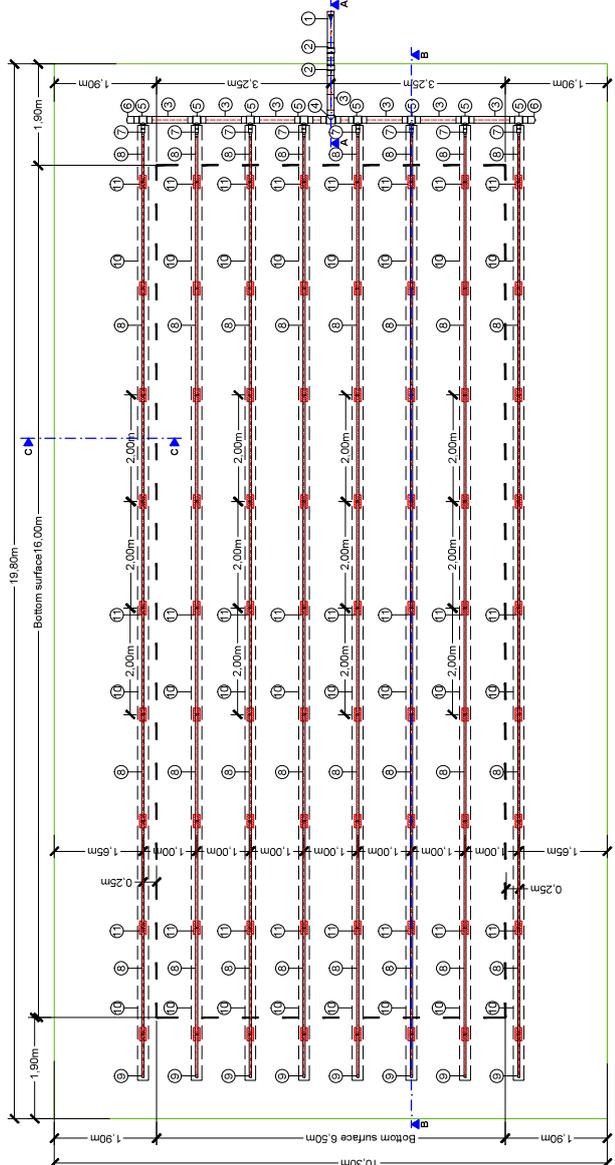


Heights and types Aggregates

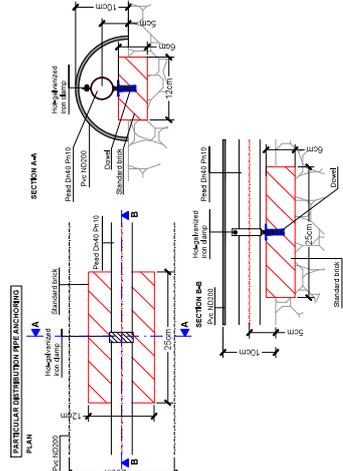
20cm	Gravel 5-10 mm
40cm	Sand 0.2-5 mm
20cm	Gravel 5-10 mm
20cm	Gravel 20-40 mm
Average medium depth 1.00 m	



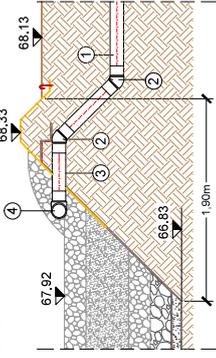
FEEDING SYSTEM - VF2 UNSAT - LINE A
Scale 1:50



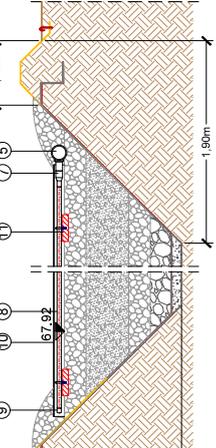
LEGEND	
①	Plead ND125 Pn10
②	Plead Elbow 45° ND125 Pn10
③	Plead ND125 Pn10
④	Plead Tee 90° ND125 Pn10
⑤	Plead reducer Tee 90° ND125-63 Pn10
⑥	Plead plug ND125 Pn10
⑦	Plead reducer ND63-40 Pn10
⑧	Plead ND40 Pn10 drilled every meter with holes Ø25mm
⑨	Plead plug ND40 Pn10
⑩	Pvc ND200 Sp2 cut in half
⑪	Distribution pipe anchoring



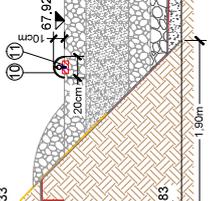
SECTION A-A
Scale 1:25



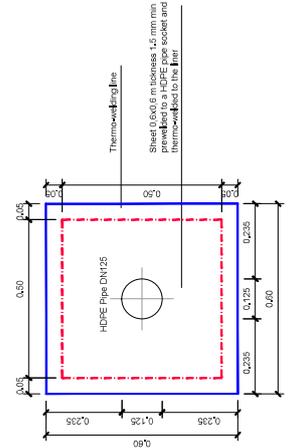
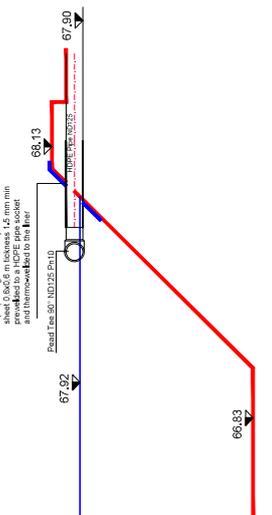
SECTION B-B
Scale 1:25



SECTION C-C
Scale 1:25



VF2 UNSAT - LINE A - INLET
Out Scale



Lesvos (Greece)

HYDRONUSA - D3.2
A full constructed wetland

Hydro-USA
1731 N. 1st Ave. • Folsom, CA 95630
Tel: 916.439.7279 • Fax: 916.439.7280



Drawn by: **Hydro-USA**
Checked by: **Hydro-USA**
Date: **January 2021**

Scale: **As Shown**
Status: **Final**

Project: **VF2 UNSAT - Line A - Feeding system**

Supervision: **Hydro-USA**
Project: **Hydro-USA**

Drawn by: **Hydro-USA**
Checked by: **Hydro-USA**
Date: **January 2021**

Scale: **As Shown**
Status: **Final**

Project: **VF2 UNSAT - Line A - Feeding system**

Supervision: **Hydro-USA**
Project: **Hydro-USA**

Drawn by: **Hydro-USA**
Checked by: **Hydro-USA**
Date: **January 2021**

Scale: **As Shown**
Status: **Final**

Project: **VF2 UNSAT - Line A - Feeding system**

Supervision: **Hydro-USA**
Project: **Hydro-USA**

Drawn by: **Hydro-USA**
Checked by: **Hydro-USA**
Date: **January 2021**

Scale: **As Shown**
Status: **Final**

Project: **VF2 UNSAT - Line A - Feeding system**

Supervision: **Hydro-USA**
Project: **Hydro-USA**

Drawn by: **Hydro-USA**
Checked by: **Hydro-USA**
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Scale: **As Shown**
Status: **Final**

Project: **VF2 UNSAT - Line A - Feeding system**

Supervision: **Hydro-USA**
Project: **Hydro-USA**

Drawn by: **Hydro-USA**
Checked by: **Hydro-USA**
Date: **January 2021**

Scale: **As Shown**
Status: **Final**

Project: **VF2 UNSAT - Line A - Feeding system**

Supervision: **Hydro-USA**
Project: **Hydro-USA**

Drawn by: **Hydro-USA**
Checked by: **Hydro-USA**
Date: **January 2021**

Scale: **As Shown**
Status: **Final**

Project: **VF2 UNSAT - Line A - Feeding system**

Supervision: **Hydro-USA**
Project: **Hydro-USA**

Drawn by: **Hydro-USA**
Checked by: **Hydro-USA**
Date: **January 2021**

Scale: **As Shown**
Status: **Final**

Project: **VF2 UNSAT - Line A - Feeding system**

Supervision: **Hydro-USA**
Project: **Hydro-USA**

Drawn by: **Hydro-USA**
Checked by: **Hydro-USA**
Date: **January 2021**

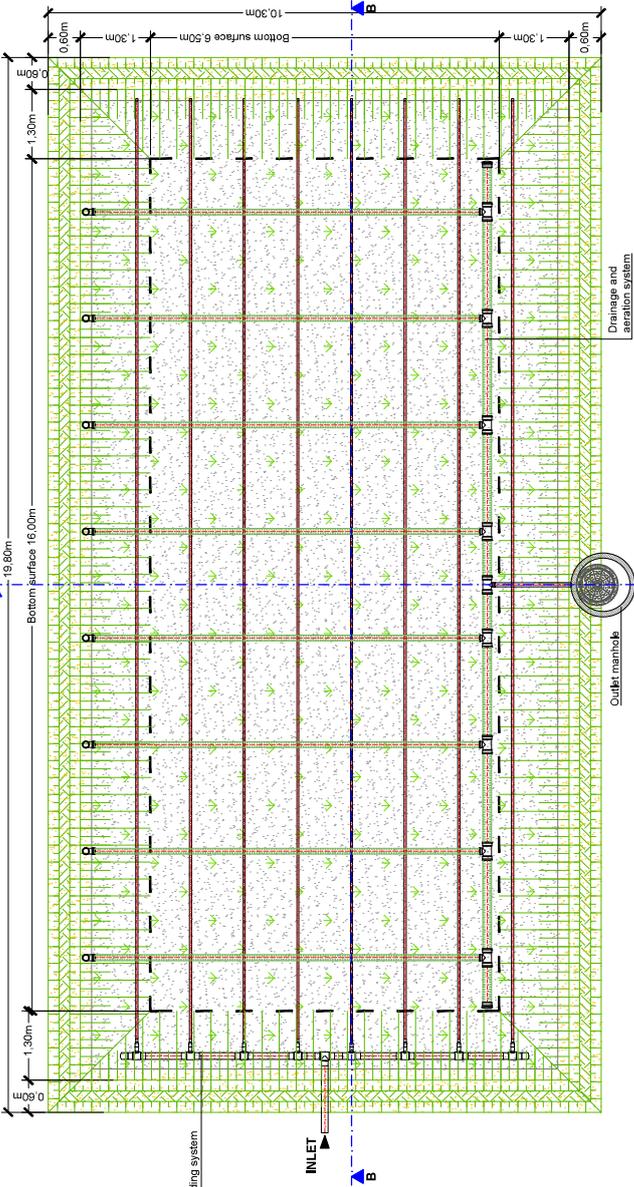
Scale: **As Shown**
Status: **Final**

Project: **VF2 UNSAT - Line A - Feeding system**

PLAN - VF2 UNSAT - LINE B

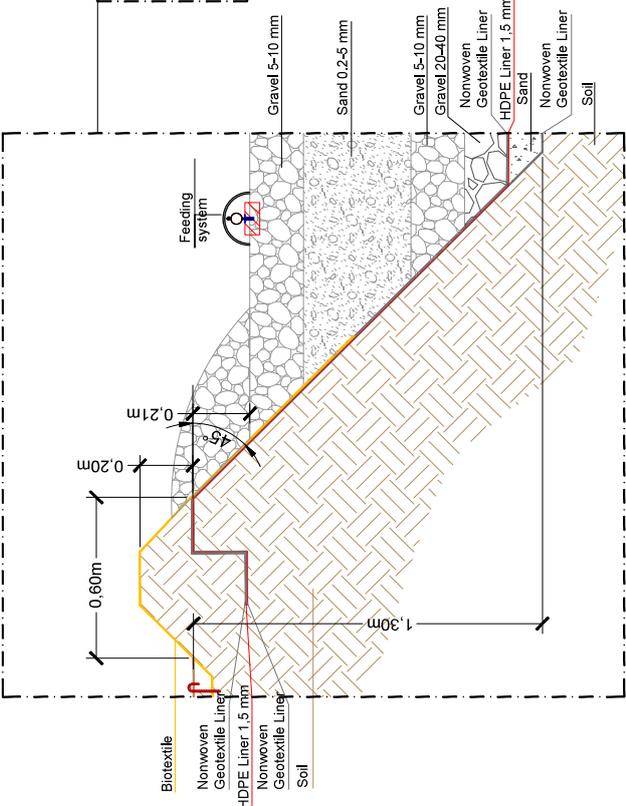
Scale 1:50

LEGEND VF PLAN	
	Drainage system
	Bed media
	Scripus spp
	Bottom bed
	Banks
	Biotextile

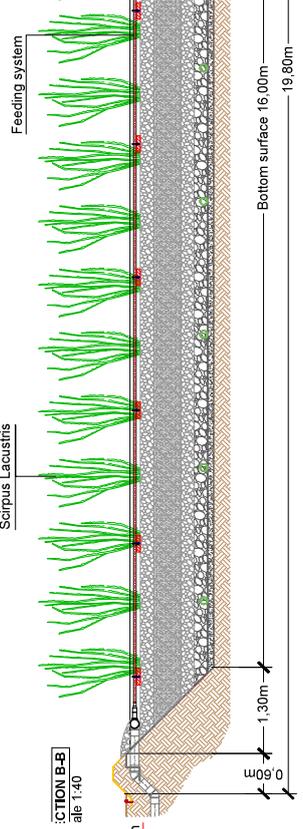
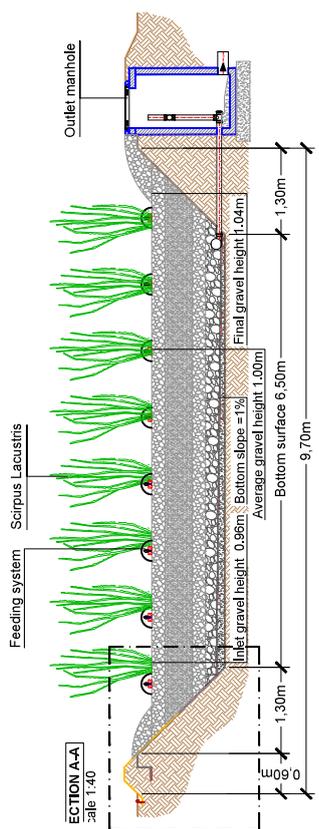


DETAIL ZOOM

Scale 1:10

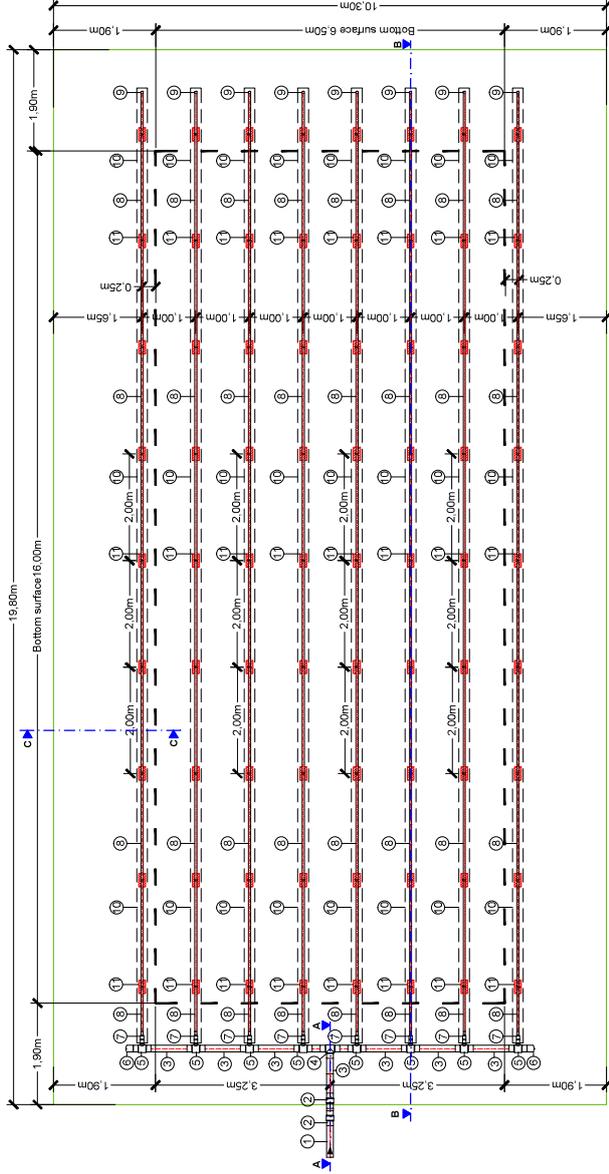


Heights and types Aggregates	
20cm	Gravel 5-10 mm
40cm	Sand 0.2-5 mm
20cm	Gravel 5-10 mm
20cm	Gravel 20-40 mm
Average gravel depth 1,00 m	



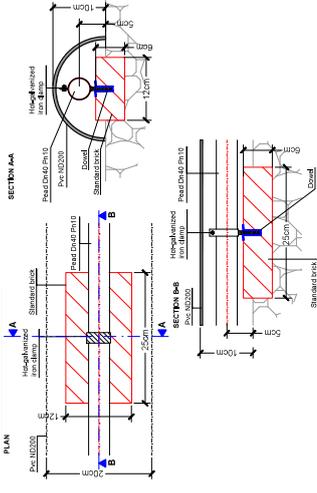
FEEDING SYSTEM - VF2 UNSAT - LINE B

Scale 1:50



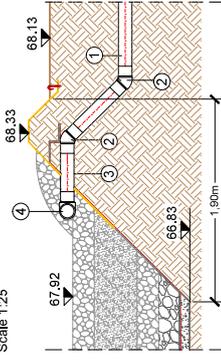
LEGEND	
①	Peat ND/125 Pn10
②	Peat Elbow 45° ND/125 Pn10
③	Peat ND/125 Pn10
④	Peat Tee 90° ND/125 Pn10
⑤	Peat reducer Tee 90° ND/125-53 Pn10
⑥	Peat plug ND/125 Pn10
⑦	Peat reducer ND65-40 Pn10
⑧	Peat ND40 Pn16 drilled every meter with holes D=5 mm
⑨	Peat plug ND40 Pn16
⑩	Pvc ND200 S/n2 cut in half
⑪	Distribution pipe anchoring

PARTICULAR RETENTION PIPE ANCHORING



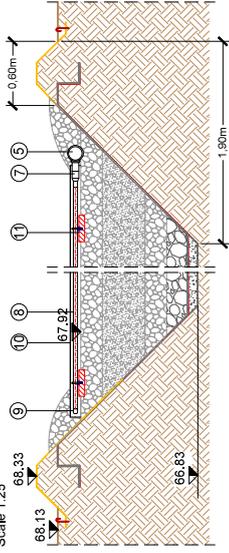
SECTION A-A

Scale 1:25



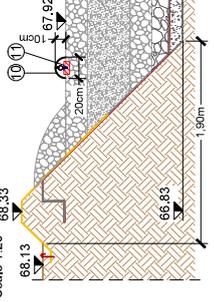
SECTION B-B

Scale 1:25



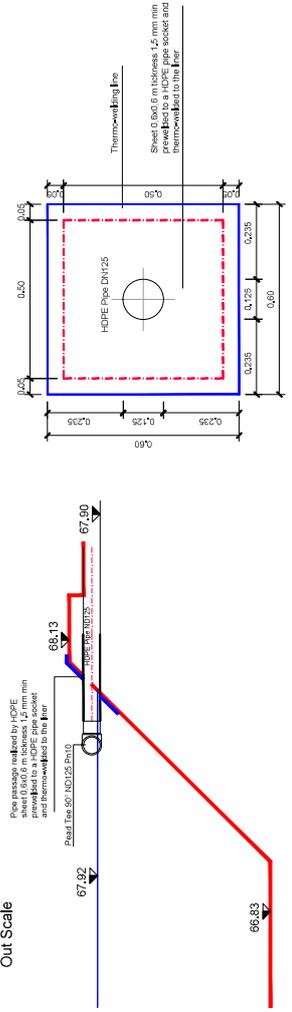
SECTION C-C

Scale 1:25



VF2 UNSAT - LINE A - INLET

Out Scale



Lesvos (Greek)

HYDROUSA - D3.2
Su built constructed wetland

Scale: 1:50
Version: 01

Drawn by: E. Koutas
Checked by: E. Koutas
Date: 11/01/2021
Project: 11/21/2021

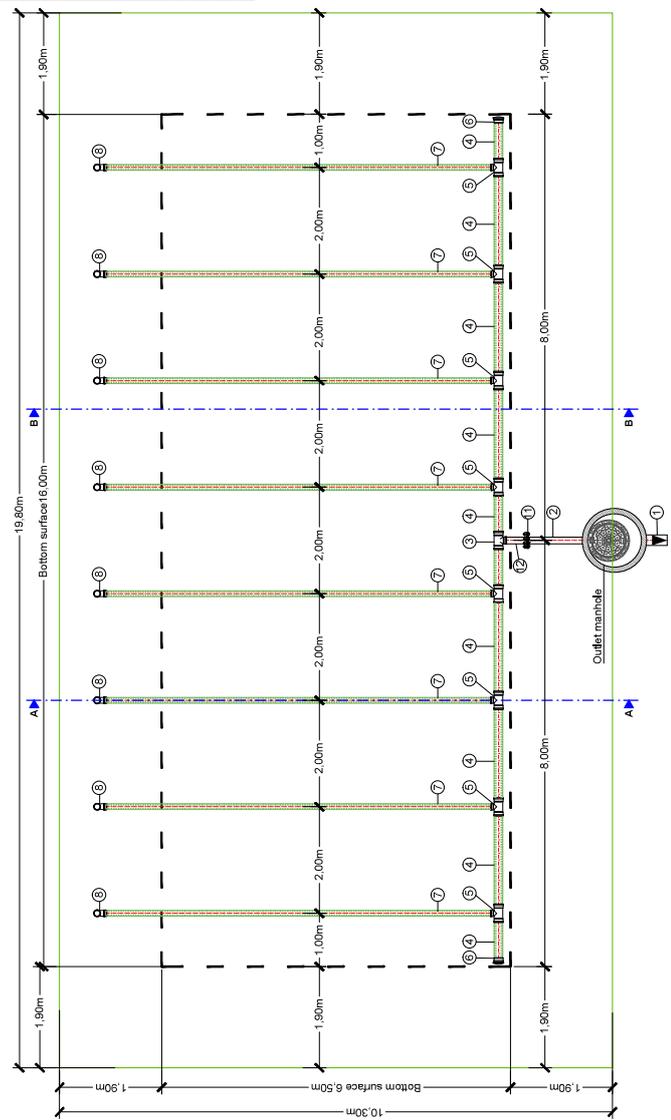
Drawing no: 6.3

Supervisor: E. Koutas
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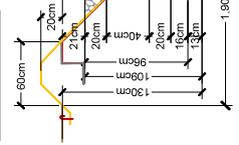
DRAINAGE AND AERATION SYSTEM - VF2 UNSAT - LINE A
Scale 1:50



LEGEND

①	Pvc ND200 S _n 4
②	Pvc ND125 S _n 4
③	Pvc reducer Tee 90° ND160-125
④	Pvc slotted ND160
⑤	Pvc reducer Tee 90° ND160-110
⑥	Pvc Plug ND160
⑦	Pvc slotted ND110
⑧	Pvc elbow 45° ND110
⑨	Pvc ND110 S _n 4
⑩	Chimney ND110
⑪	Flanges for HDPE-Pvc transition ND125
⑫	Prasd ND200

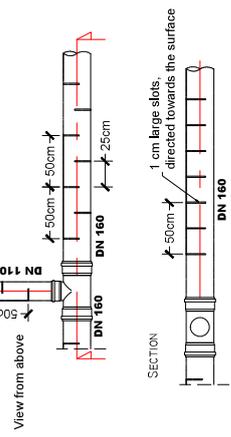
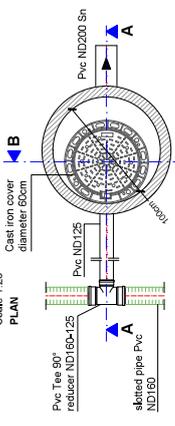
SECTION B-B
Scale 1:25
INLET GRAVEL HEIGHT



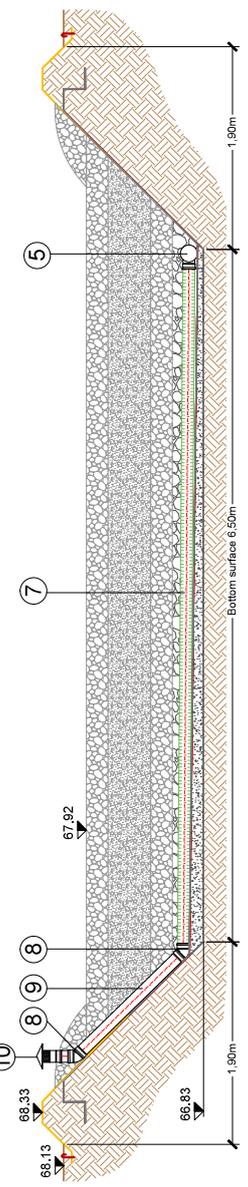
Heights and types Aggregates

20cm	Gravel 5-10 mm
40cm	Sand 0.2-5 mm
20cm	Gravel 5-10 mm
20cm	Gravel 20-40 mm
Average medium depth 1,00 m	

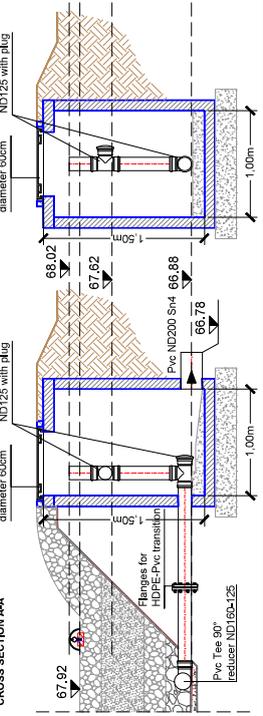
OUTLET MANHOLE WITH WATER LEVEL CONTROL DEVICE
Scale 1:25



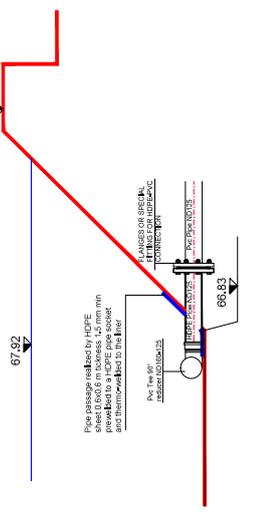
SECTION A-A
Scale 1:25

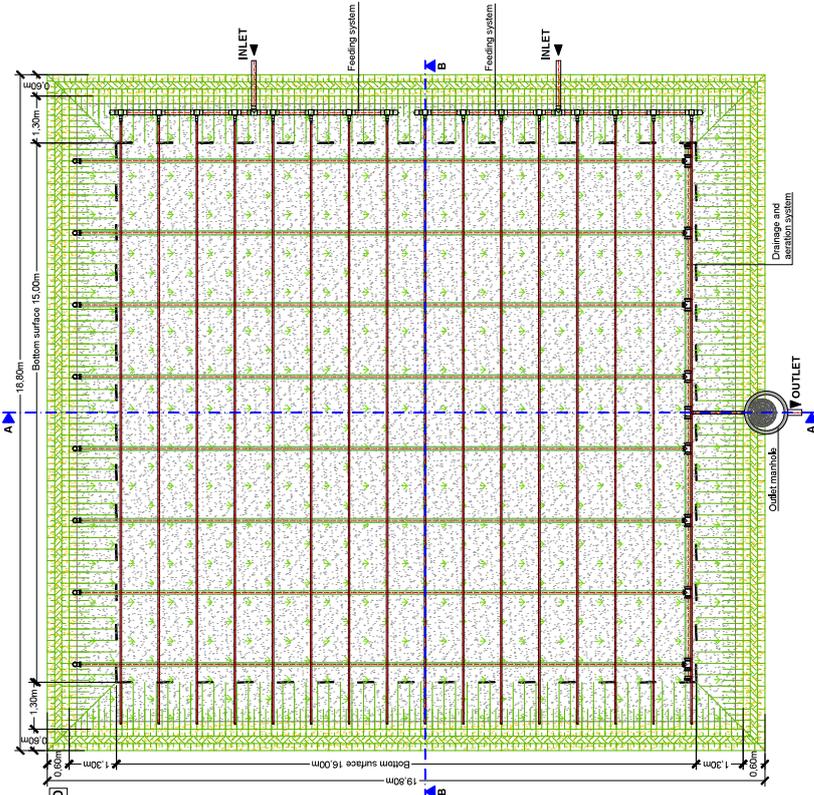


CROSS SECTION B-B



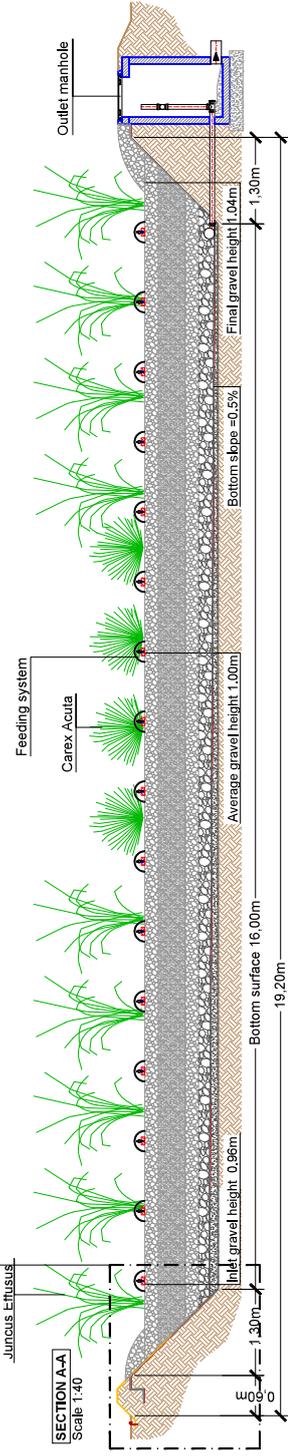
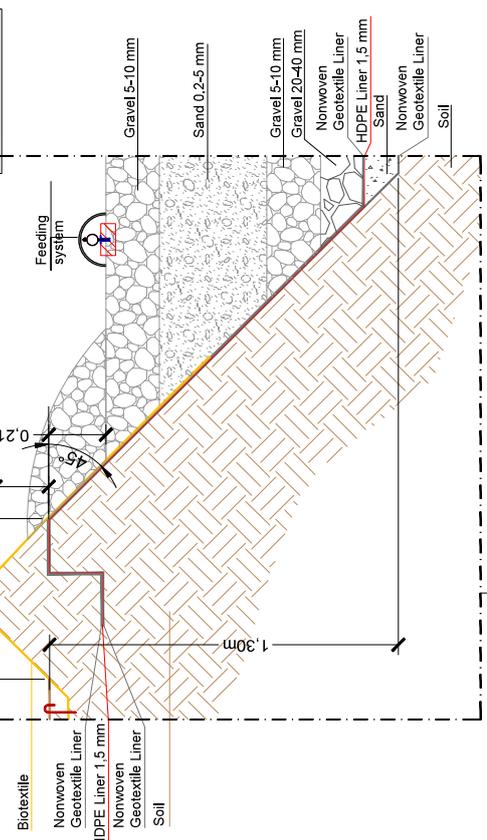
VF2 UNSAT - LINE A - OUTLET
Out Scale





LEGEND VF PLAN
Scale 1:75

	Drainage system
	Bed media
	Typha (up part)
	Typha (down part)
	Juncus (up part)
	Juncus (down part)
	Banks
	Biorette



Heights and types Aggregates

20cm	Gravel 5-10 mm
40cm	Sand 0.2-5 mm
20cm	Gravel 5-10 mm
20cm	Gravel 20-40 mm
Average medium depth 1,00 m	

