

CYPRUS ENVIRONMENT SYMPOSIUM



Aphrodite Hills Sewage Treatment Plant (STP)

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Aphrodite Hills STP

In the initial master planning of the Aphrodite Hills back in 1996-1997 the sewerage disposal/treatment was an issue to be resolved. To have septic tanks for over 1000 properties was not a solution.

The hotel, the clubhouse and the other “public” buildings would in any case require a treatment plant.

Due to the morphology of the plot, separated in the middle by a deep ravine, the location of the STP was finally chosen to be at the entrance of the resort, the location with the lowest elevation. Right from the beginning of operation in 2001 the STP was always under maintenance by a specialist company, with daily attendance for the STP as well as the 15 pumping stations around the resort.

The challenge has always been to efficiently operate the plant and minimise the odours that would otherwise give a bad image for the visitor.

Challenges to the operation include:

- Minimize Odours at the entrance of the sewage
- Minimize the use of wetties by residents
- Maximize the sludge digestion and minimize sludge disposal.
- Maintain the quality of the treated effluent



Aphrodite Hills STP

- The Development
- Collection
- Grid and solids removal
- Oil and fat separation
- Balancing Tank
- Stream allocation
- Phosphorous and Nitrogen removal
- Extended Aeration
- Settlement
- Chlorination
- Filtration
- Irrigation
- Storage

Aphrodite Hills Resort



Aphrodite Hills

— Cyprus —

Location Key

- Adonis Village - E4
- Aeneas Grand Villas - A5
- Alexander Heights - C4
- Aphrodite Hills Hotel - D3
- Apollo Heights - C6
- Creche - C4
- Dionysus Greens - B5
- Doctor - C4
- Golf Academy Course - C5
- Golf Clubhouse - D4
- Golf Maintenance - E6
- Helios Heights - C5
- Hermes Villas - C3
- Hestiaes Greens - D4
- Holiday Rentals - D4
- Kid's Club - C4
- Orpheus Village - G6
- Playground - C4
- Poseidon Villas - D2
- Real Estate Offices - D4
- Resort Management Offices - D4
- Restaurants - C4
- Shops - D4
- Soccer School - C5
- St. Catherine's Chapel - D4
- Tennis Academy - C5
- Theseus Village - B5
- The Retreat Spa - C4
- Village Square - D4
- Zephyros Village - B6

Road Names Index

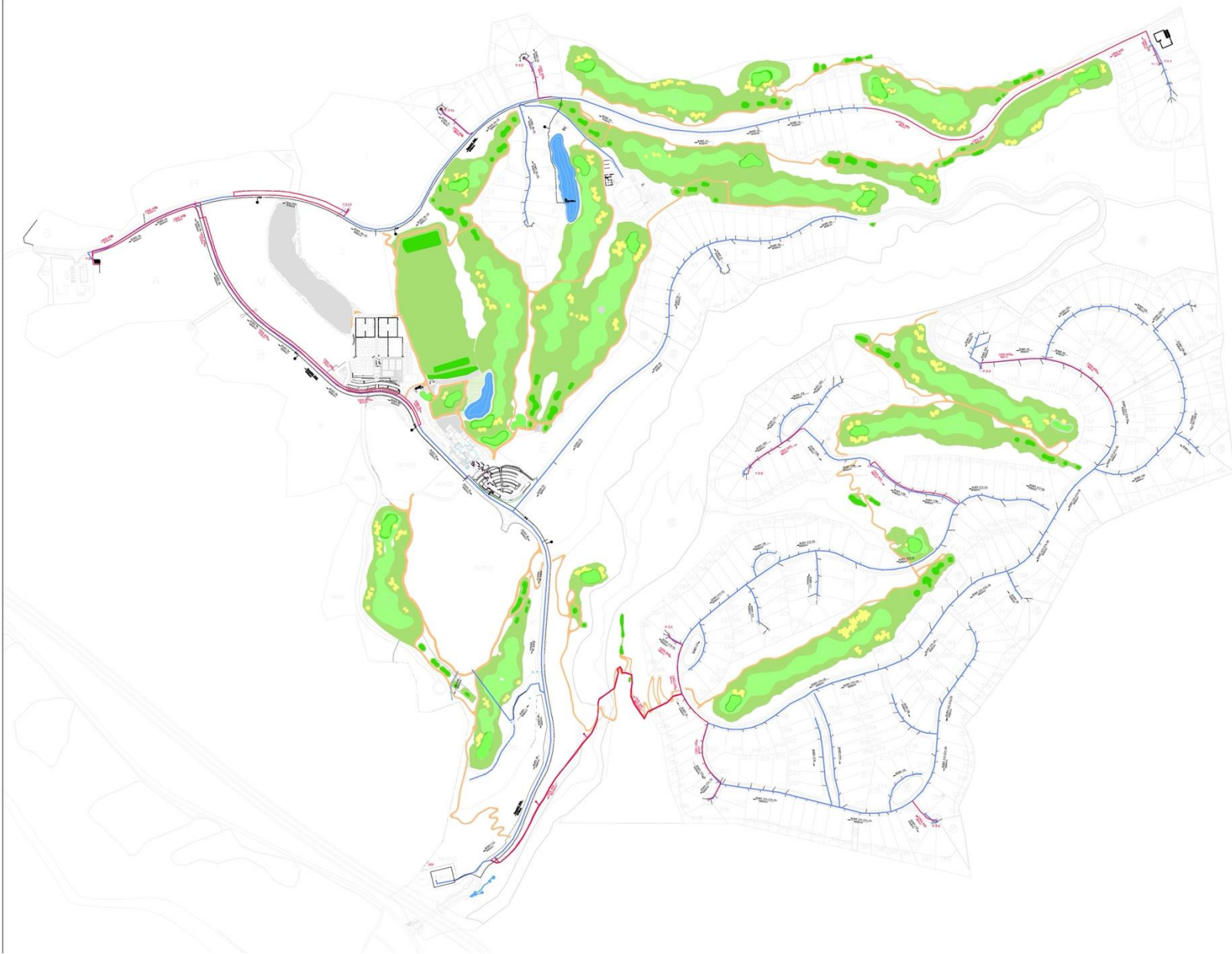
- Acheon Avenue - F2-H3
- Agapinaros Avenue - A5-J9
- Aphrodite Avenue - D2-B6
- Aplallon Avenue - H5-E2
- Evagoras Lanitis Avenue - D4-H6

- Achilles Street - F1
- Adonis Street - J7
- Aeolus Street - F3
- Ajax Street - F3
- Akamas Street - F5
- Anemonas Street - F4
- Dionysos Street - H5-J4
- Hector Street - D2
- Hephaestus Street - G4
- Icarus Street - E2
- Kinyras Street - D6
- Kaurion Street - G2
- Olympus Street - C4
- Orestis Street - J4
- Palaeapafos Street - D7
- Perseus Street - H3
- Persefoni Street - J5
- Poseidon Street - D6
- Selene Street - H5
- Zeus Street - G1

- Total Area 2,320,000m²
- 12.5Km or Roads
- 900 Residential units
- 295 rooms Hotel
- 2000m² SPA
- 18 hole Golf Course PGA
- 6 Hole Academy Course
- 9 Tennis Courts academy
- 2 Padel Courts
- Basketball Court
- Football



Aphrodite Hills Sewerage

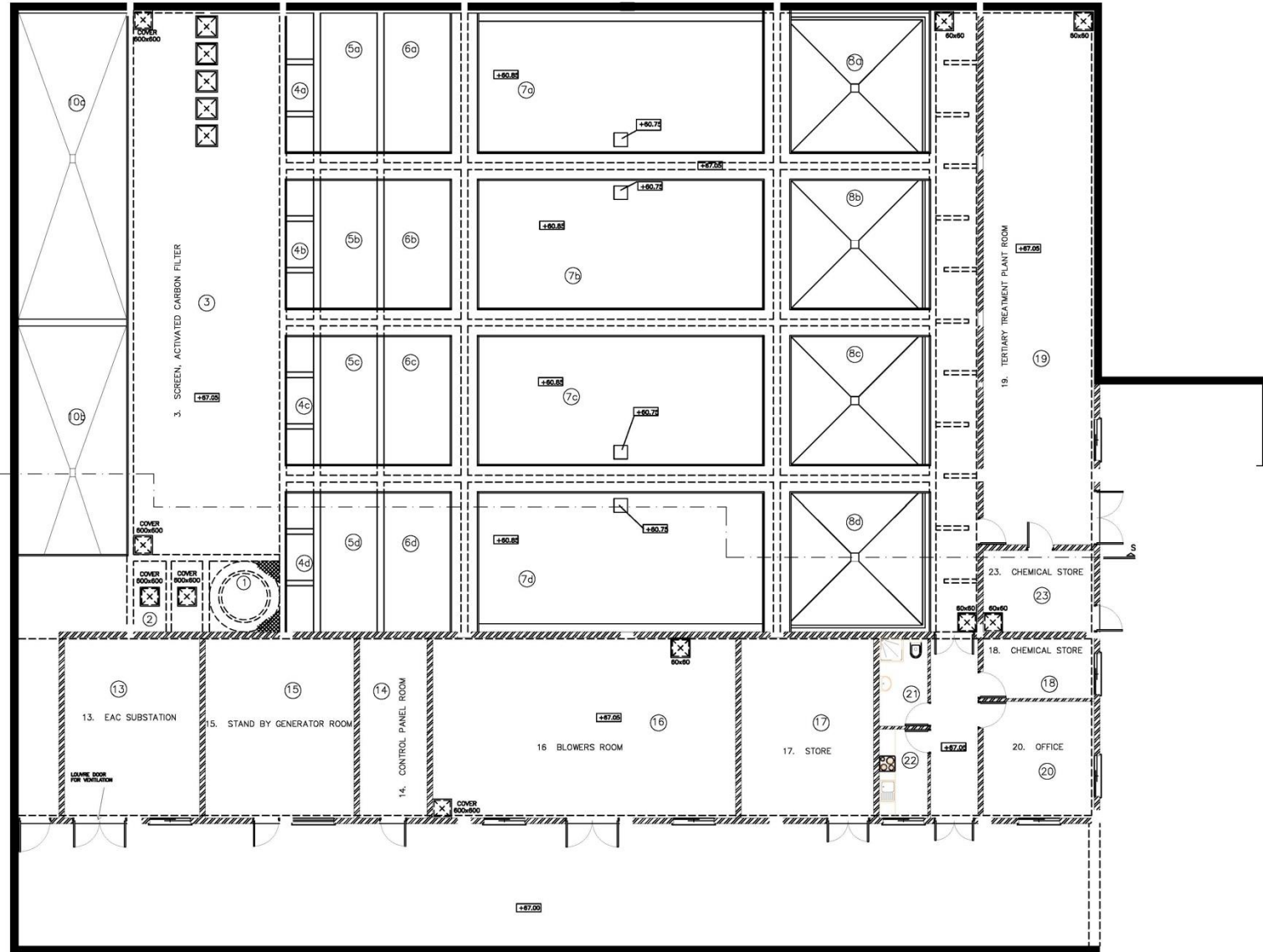


10,700m of gravity sewer

5,500m of pumped main

2,750m of treated effluent
pumping main

Aphrodite Hills STP



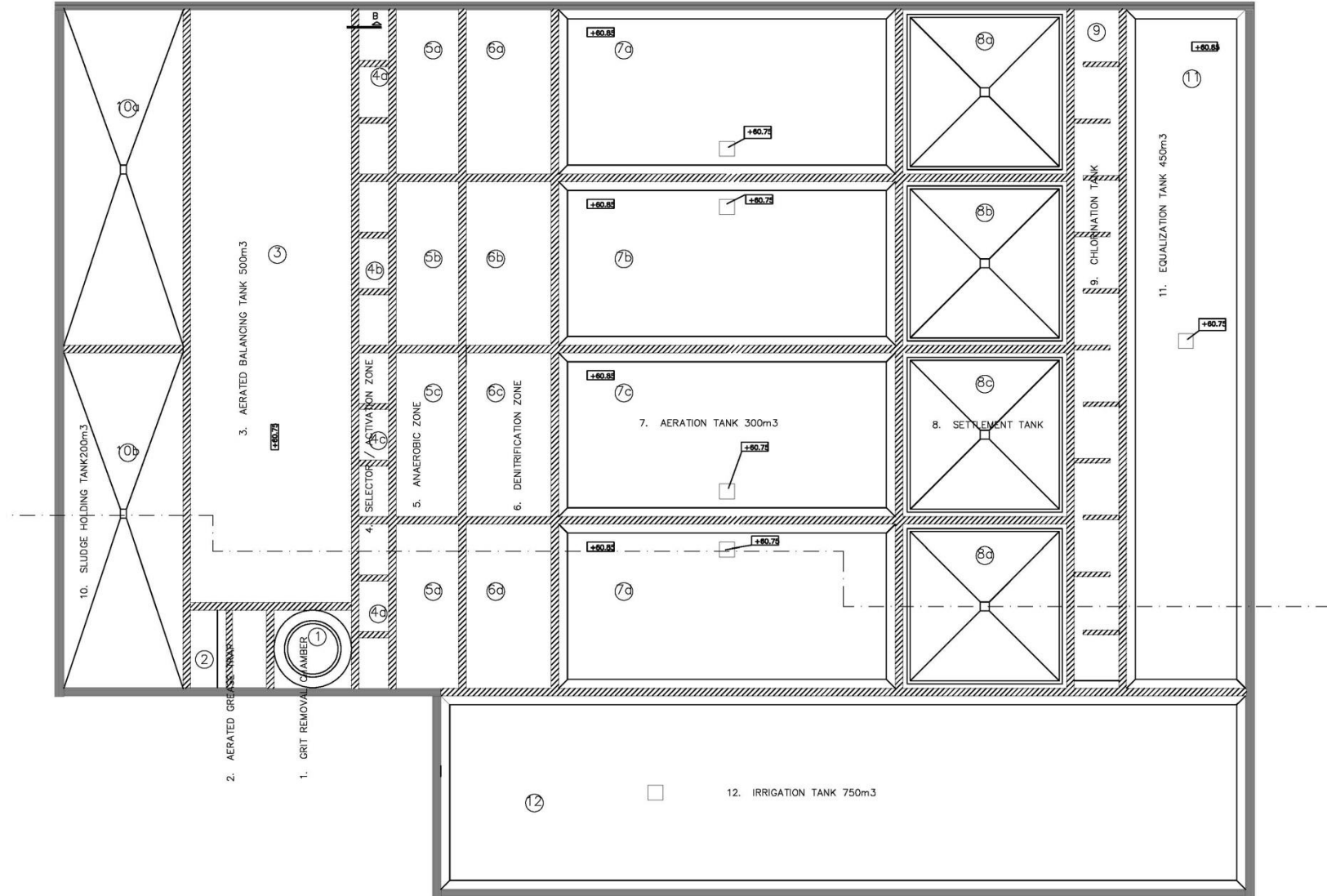
Full capacity of STP:
2,000m³/day

Current maximum inflow
1200m³/day

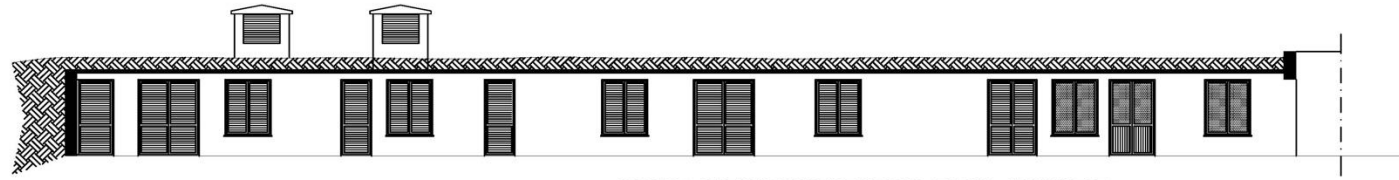
Two streams out of 4
used up to now.

Third stream completed
and ready to be put in
operation in the spring.

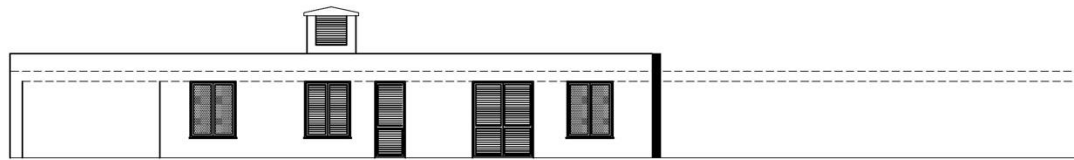
Aphrodite Hills STP



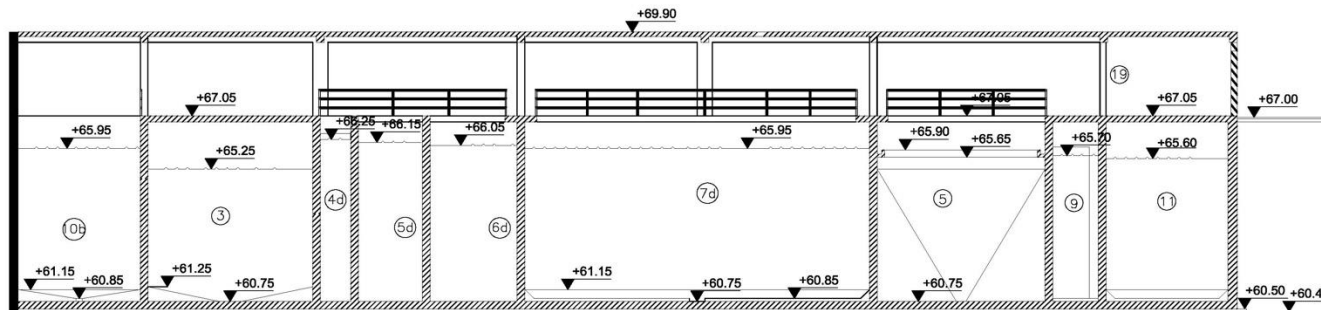
Aphrodite Hills STP



FRONT ELEVATION/SECTION FROM CORRIDOR

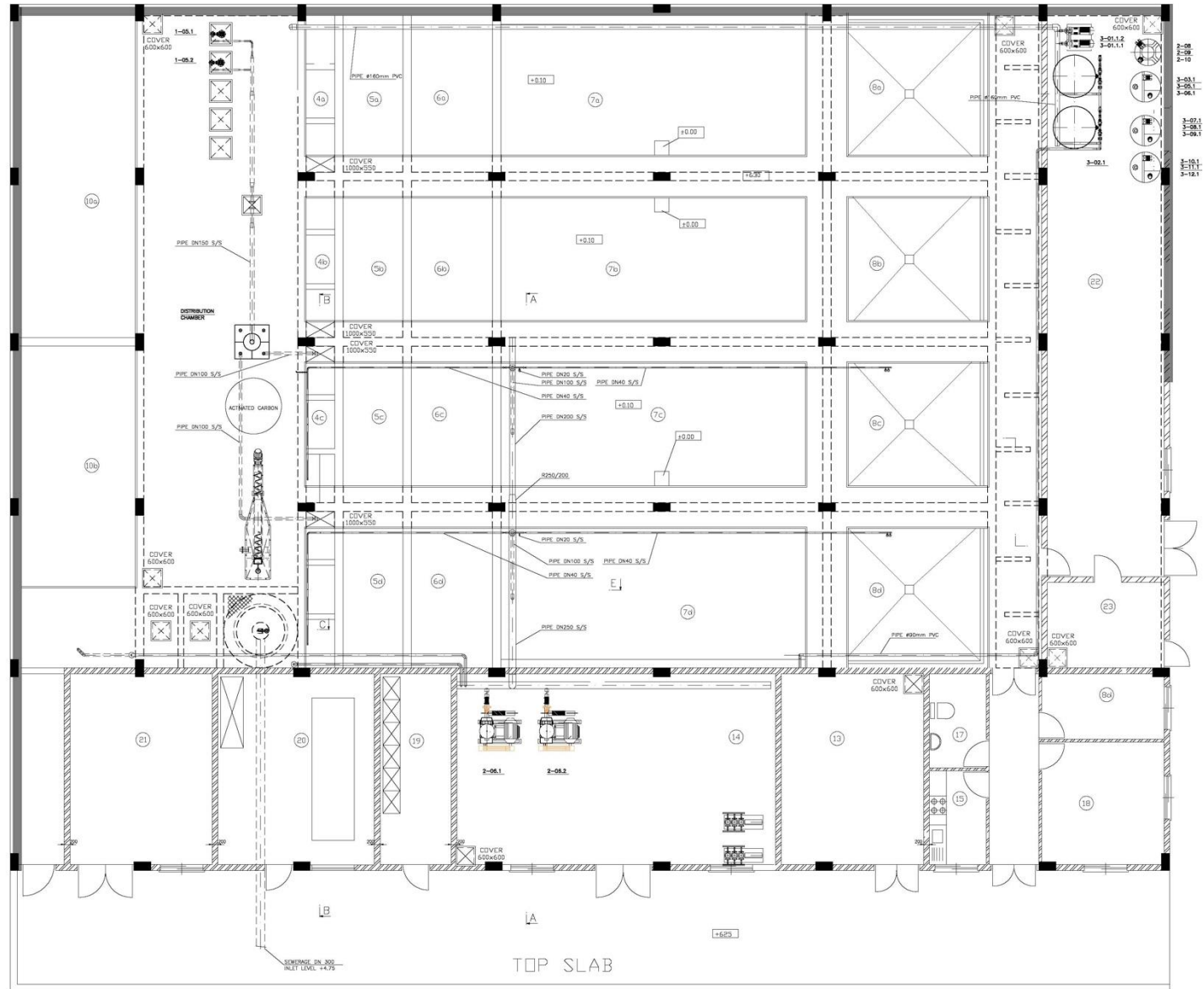


SITE ELEVATION



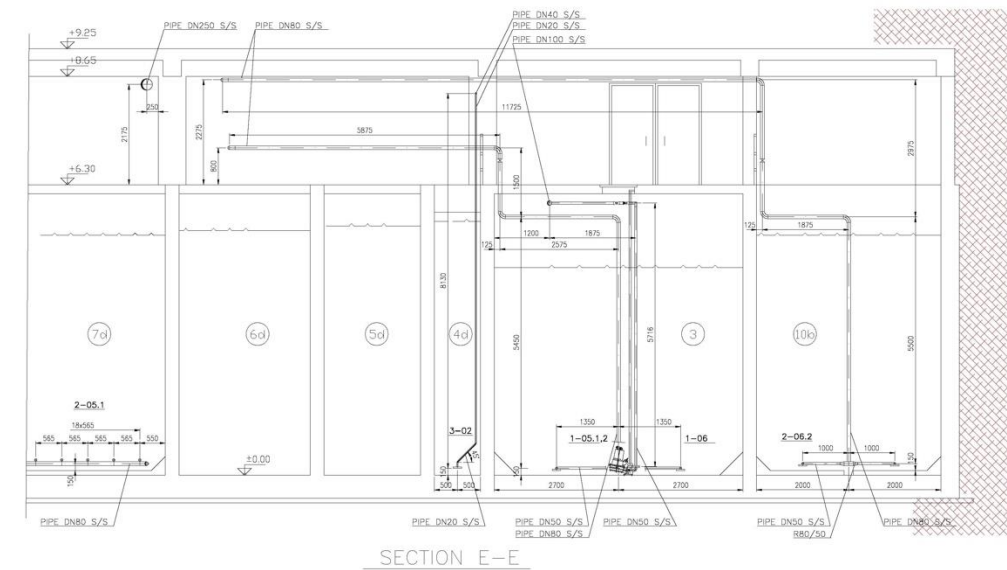
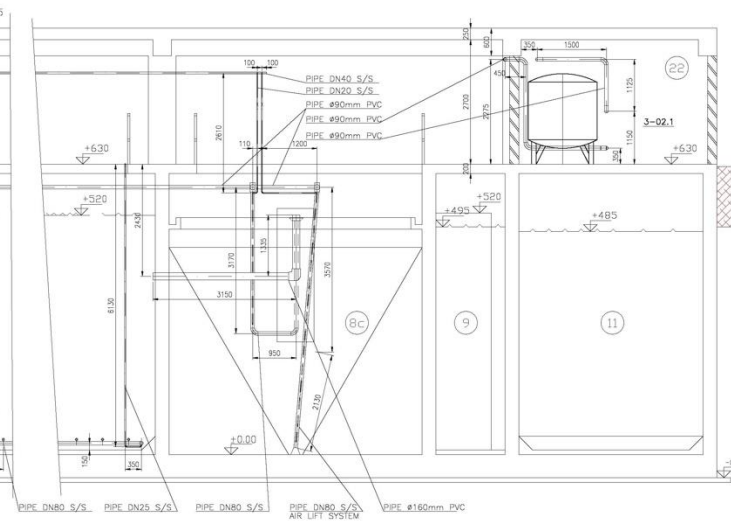
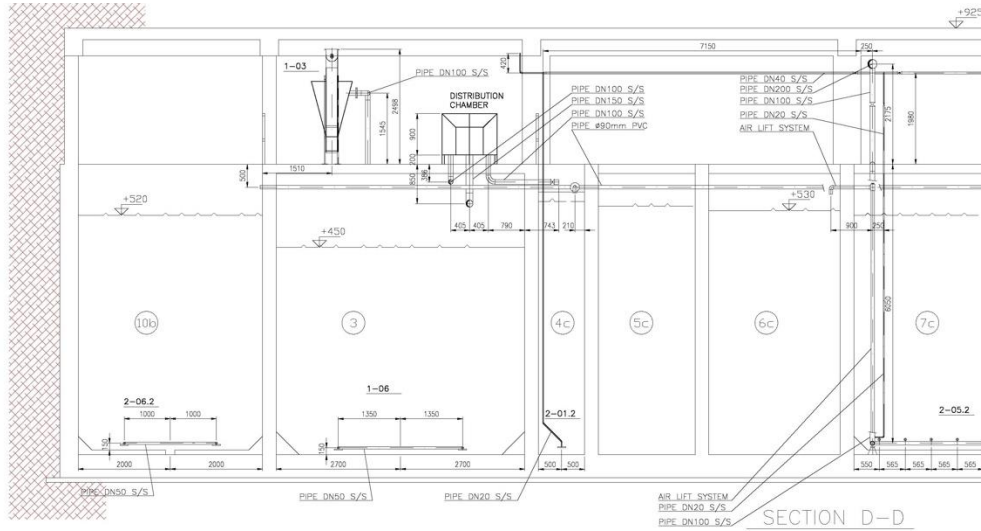
SECTION S-S (dwg A02)

Aphrodite Hills STP



Aphrodite Hills STP

CYPRUS ENVIRONMENT SYMPOSIUM



- | | |
|----------------------------------|---------------------------|
| 1. GRIT REMOVAL CHAMBER | 13. SLUDGE DEWATERING SY |
| 2. AERATED GREASE TRAP | 14. BLOWERS ROOM |
| 3. AERATED BALANCING TANK | 15. KITCHEN |
| 4. SELECTOR / ACTNATION ZONE | 16. CHEMICAL LABORATORY |
| 5. ANAEROBIC ZONE | 17. WC - TOILET |
| 6. DENITRIFICATION ZONE | 18. ENGINEERING ROOM |
| 7. AERATION / NITRIFICATION TANK | 19. CONTROL PANEL ROOM |
| 8. SETTLEMENT TANK | 20. STAND BY GENERATOR I |
| 9. CHLORINATION TANK | 21. EAC |
| 10. SLUDGE HOLDING TANK | 22. TERTIARY TREATMENT PL |
| 11. EQUALIZATION TANK | 23. CHEMICAL STORE |
| 12. IRRIGATION TANK | |



Aphrodite Hills STP

Produced Irrigation Water 175,000 m³/year
Pumped to the main irrigation lake 10,000m³

Electricity Used in the STP 470,000 kWhr/year

Cost of Electricity at 0.3€/kwhr: €141,000

Cost per m³ : 0.80€/m³

Photovoltaic Installation 150kW

Production 245,000 kWhr/year

52% of usage.

Water used for irrigation

Golf 360,000 m³

Public greens and village gardens

75,000m³

TOTAL 435,000 m³

40% of which treated effluent from the
STP



Aphrodite Hills STP



Aphrodite Hills STP

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Aphrodite Hills STP



Aphrodite Hills STP



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THANK YOU



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