

**Global Water Partnership – Mediterranean (GWP – Med)**  
**Legally and lawfully represented by the civil non-profit society**  
**MEDITERRANEAN INFORMATION OFFICE FOR ENVIRONMENT,**  
**CULTURE AND SUSTAINABLE DEVELOPMENT – MIO ECSDE**

**CALL FOR QUOTATIONS**  
**FOR THE REINSTATEMENT OF THE STORMWATER RESERVOIR AT**  
**PAOLA, MALTA**  
**WITHIN THE FRAMEWORK OF THE**  
***CLIMATE CHANGE ADAPTATION THROUGH NON CONVENTIONAL***  
***WATER RESOURCES MANAGEMENT IN NORTH MEDITERRANEAN***  
**PROGRAMME (ALTER AQUA)**

Global Water Partnership – Mediterranean (GWP – Med), as legally and lawfully represented by the civil non-profit society “MEDITERRANEAN INFORMATION OFFICE FOR ENVIRONMENT, CULTURE AND SUSTAINABLE DEVELOPMENT – MIO-ECSDE” intends to process a call for quotations for **“The reinstatement of the stormwater reservoir at Paola, Malta”** within the framework of the *Climate Change Adaptation through Non Conventional Water Resources Management in North Mediterranean Programme (a.k.a. Alter Aqua)*.

Project budget amounts to the maximum sum of thirty thousand Euros (€30,000.00), exclusive of VAT, as VAT is not applicable for intra-EU transactions. The Project is funded by the Coca-Cola Foundation.

Completion date of the works is the 15<sup>th</sup> of October 2015.

**Procurement procedure**

The procurement will proceed having regard to:

1. General principles of EU law on public procurements.
2. Internal Rules and Regulations of MIO-ECSDE.
3. The Memorandum of Understanding, dated 23.10.2014, among the Ministry for Energy and Health, the Ministry for Gozo, the Global Water Partnership Mediterranean and the Coca-Cola System in Malta.
4. The present call for quotations
5. The laws of Malta regarding the execution of the works under procurement.

### **Awarding Criterion**

The awarding criterion of the tender is the lowest bidding price.

### **PLACE & TIME OF OFFERS SUBMISSION**

Interested Parties shall submit their offers on their own responsibility, either in person or through a specially authorized representative, or by sending it by registered prepaid post with delivery receipt, at the premises of MIO-ECSDE, address: *12 Kyrristou str, 10556 Athens, Greece* (Tel: +30-2103247267, -3247490) on the condition that offers **shall reach MIO-ECSDE's premises by Monday 15/06/2015** at 15:00 (CET+1).

Offers submitted after the specified date and time or bids that have been duly posted but have not reached the designated place in good time, shall not be taken into consideration and shall be returned as inadmissible, without being unsealed.

**Inquiries on the call for quotations terms:** Ms Konstantina Toli

Contact tel: +30-210-3247267, -2103247490

e-mail: [secretariat@gwpmed.org](mailto:secretariat@gwpmed.org)

The present call for quotations will be posted on the website of MIO-ECSDE ([www.mio-ecsde.org](http://www.mio-ecsde.org)), as well.

Athens, 28/05/2015

Prof. Michael J. Scoullas

Chairman GWP-Med

Chairman MIO-ECSDE

## ANNEX 1

### INSTRUCTIONS TO BIDDERS

Bidders shall:

1. Fill in the Details of Bidder Form and sign the declaration included therein.
2. Provide evidence attesting to:
  - Having obtained a certificate related to a course on reinstatement of rainwater harvesting systems- issued by an accepted institution such as the ETC and MCAST - and at least one (1) year experience in reinstatement of rainwater harvesting reservoirs ;

AND

- evidence of relevant experience in execution of works of a similar nature (reinstatement of rainwater harvesting systems) over the past [3 years], including the nature and value of the relevant contracts, as well as works in hand and contractually committed.
- At least one project of a similar scope/nature completed in the last 3 years. Bidders are also requested to submit letters of recommendation from at least 1 distinct project as well as 2 photographs of the completed project.

In so listing the end clients, the tenderer is giving his consent to the Evaluation Committee, so that the latter may, if it deems necessary, contact the relevant clients, with a view to obtain from them an opinion on the works provided to them, by the tenderer.

3. Submit their bid, in a single sealed envelope, to arrive at the MIO-ECSDE premises by **Monday 15/06/2015** at 15:00 (CET+1) at the:

MIO-ECSDE

*12 Kyrristou str,*

*10556 Athens,*

*Greece*

Bids which arrive later than the set date will not be considered for the call.

4. Execute the works subject of this quotation in accordance with the schedule of quantities and any specifications contained therein, in accordance with the best practices of the trade, to the satisfaction of the contracting authority and in conformity to the laws of Malta regarding public works.

5. Be bound by the Special Conditions and the General Conditions which are deemed to form an integral part of this quotation document.
6. Submit any queries to email address: [secretariat@gwpmed.org](mailto:secretariat@gwpmed.org) by not later than 4 working days prior to the closing date for the submission of the quotation.

Bidders are hereby informed that:

7. Where the General Conditions are in contrast with the Special Conditions, the latter shall take precedence over the former.
8. The contracting authority reserves the right to reject any quotation.
9. The quotation shall be awarded to the cheapest technically compliant quotation.
10. In submitting this quotation, the bidder is declaring that all employees engaged on this contract shall enjoy working conditions such as wages, salaries, vacation and sick leave, maternity and parental leave as provided for in the relative Employment Legislation. Furthermore, s/he shall comply with Chapter 424 of the Laws of Malta (Occupational Health and Safety Authority Act) as well as any other national legislation, regulations, standards and/or codes of practice or any amendment thereto in effect during the execution of the contract.

The bidder is further declaring that s/he accepts without reserve that, in the event that it is proved otherwise during the execution of the contract, the contract shall be terminated with immediate effect and s/he shall raise no claims for damages or compensation.

## **ANNEX 2**

### **SPECIAL CONDITIONS**

1. The successful bidder shall submit a performance guarantee which shall be for the amount of 10% of the contract value.
2. The performance period for works will be no more than 8 weeks from the issue of the Letter of Acceptance.
3. The Contractor shall be liable to a deduction of €200 per day, for every day of delay, including Sundays and public holidays, up to a maximum of 15% of the contracted amount.
4. The contractor shall provide free maintenance on the works carried out on this contract for a period of one year. As a safeguard for this provision, half of the performance guarantee shall be retained for an additional period of 12 months from the final certification of works.

### **GENERAL CONDITIONS**

It is hereby construed that the bidders have read and accepted in full and without reservation the conditions outlined in the MODEL CONTRACT, and are therefore waiving any standard terms and conditions which they may have.

The **MODEL CONTRACT** can be viewed/downloaded from:  
[www.mio-ecsde.org](http://www.mio-ecsde.org)

## **ANNEX 3 FORMS**

### **DETAILS OF BIDDER**

Name & Surname: \_\_\_\_\_

On behalf of  
(if applicable): \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

VAT Reg. No. \_\_\_\_\_

Tel. No: \_\_\_\_\_

Mobile No: \_\_\_\_\_

Email Address: \_\_\_\_\_

**Date**

**Signature and Stamp**

## **ANNEX 4**

### **TECHNICAL SPECIFICATIONS**

#### **S1 - EXCAVATION, BACKFILLING, PIPE LAYING AND TRENCH REINSTATEMENT WORKS**

All works that will be carried out under the contract shall conform to the Road (Design & Construction) Standards published in the Government Gazette № 17,506 dated 21<sup>st</sup> November 2003. A copy of the Legal Notice 364/2003 Road (Design & Construction) Standards 2003 Regulation is being attached with this document

In the event that any particular items of work are not covered by these Standards, The American Society for testing and materials specifications (ASTM), the European Standards or any other equivalent specifications shall apply

#### **Legal Notice 364 of 2003 & Legal Notice 29 of 2010**

#### **MALTA TRANSPORT AUTHORITY ACT (CAP. 332)**

#### **Road Works (Design and Construction) Standards Regulations, 2003**

In exercise of the powers conferred by article 17 of the Malta Transport Authority Act, the Minister for Transport and Communications, after consultation with the Malta Transport Authority, has made the following regulations:-

- 1.1** The title of these regulations is the Road Works (Design and Construction) Standards Regulations, 2003.
- 1.2** Any person designing or building any road or carrying out maintenance or other work thereon shall comply with the Design and Construction Standards for Road Works provided for in regulation 3 of these regulations.
- 1.3** The Design and Construction Standards for Road Works are the following:
  - i. Volume 1 - Specifications for Road Works;

- ii. Volume 2 – Notes for Guidance on the Specification for Road Works;
- iii. Volume 3 – Road Construction Details;
- iv. Volume 4 – Method of Measurement for Road Works and Notes for Guidance of Measurement of Road Works;
- v. Volume 5 - Design Manual for Roads and Bridges;
- vi. Volume 6 - Guidelines for the Standard Presentation of Design Documents for Road Construction.
- vii. Volume 7 – Directives for the Standardization of Pavements for Traffic Areas.

- 1.4** The Design and Construction Standards for Road Works provided for in regulation 3 of these regulations shall be accessible to the public at the offices of the Malta Transport Authority, during normal office hours.
- 1.5** The Design and Construction Standards for Road Works provided for in regulation 3 of these regulations shall apply to all road works undertaken after the coming into force of these regulations but shall not apply to any road works which have been completed or commenced on the said date.
- 1.6** Without prejudice to any action that may be exercisable against any person who designs or builds any road in contravention of these regulations, nothing in these regulations shall be construed as granting a right to any person against the Malta Transport Authority or against the Government or other public authority or against any person acting in his or her official capacity as an officer or an employee of Government or of any such aforesaid authority in respect of failure of any road to conform to the performance associated with the Design and Construction Standards for Road Works stipulated in these regulations.
- 1.7** uPVC pipes shall conform to EN 1401-1-2009 standard and shall be suitable for the application area code “U” ( to be used outside the building structure) and be of nominal ring stiffness of SN 4.
- 1.8** Third Party Grating Covers should comply with the following:

Grating and frame 600mm clear opening,

According to EN124 Grade D400

With Transverse slots

Machined surfaces between grating and frame, non rocking, Silent in operation.

Suitable for crossing roads and for cycle safety  
With end pieces and bridge pieces.  
Several units can be chained (bolted) together  
Wide flanges  
Material ductile iron  
Gratings bolted to frame by four stainless steel bolts per unit  
Units can be cut to any length  
Installed assembled

**1.9** SPECIFICATIONS FOR THE INSTALLATION OF GRATINGS (please refer to tender drawing). Listed products below to be certified by BBA/Hapas or equivalent.

- a) Fast set rapid strength concrete
  - a) Compressive Strength 20N/mm<sup>2</sup> after 2 hours
  - b) Workability 5-10 mins.
  - c) Set-Time 10-20 mins.
- b) Fast setting rapid strength bedding mortar
  - a) Compressive Strength 22N/mm<sup>2</sup> within 1 hour.
  - b) Tensile Strength 5.24 N/mm<sup>2</sup> at 28 days.
  - c) Workability 5-10 mins.
  - d) Set-Time 10-20 mins.
  - e) Suitable for depths up to 10-75 mm.
  - f) Road open to Traffic in 1 hour upon completion of works.
  - g) Suitable for Ironwork conforming to BS EN 1994 or equivalent
  - h) Conforms to HD27/04 (Department Of Transport Design Manual for Roads & Bridges)
- c) Bitumen Cold Joint Sealer & Coat Spray
  - a) To be applied before application of Asphalt to increase bond of added material to substrate.
  - b) To provide effective waterproofing of area.
- d) Cold Lay Asphalt Concrete
  - a) Rapid repair Time – no cooling required.

- b) Can be trafficked immediately.
- c) Can be used in all weather conditions.
- d) High 65 PSU (for safe Trafficking Surface).

Note:

Where in this tender document a standard is quoted, it is to be understood that the Contracting Authority will accept equivalent standards. However, it will be the responsibility of the respective bidder to prove that the standards they quoted are equivalent to the standards requested by the Contracting Authority

## **S2 – IRRIGATION SYSTEM**

### **2.1 EQUIPMENT GUARANTEE**

All the plumbing equipment shall have to be guaranteed against faults or bad workmanship for at least 5 years. **This shall have to be clearly stated with the offer.**

### **2.2 PIPEWORK AND RELEVANT ACCESORIES**

#### **2.2.1 Pipes**

All material used for plumbing shall be run in an approved **rigid** plastic material. The manufacturer and material of all pipe fittings shall be of the same type as that of the pipes. All proposed pipes shall be accompanied by comprehensive technical and descriptive literature which shall include details of their material properties and characteristics.

All pipes used in the first-class pipework and second class installation inside the block, shall be run in a suitable water plumbing material and jointing shall be by a suitable method. The pipes used in conjunction with pressurised systems shall withstand a Maximum working pressure of 6 bar at 65 deg.C.

All valves, fittings and other accessories used in conjunction with the pipe system shall be of the same manufacture and fully compatible with the pipe system being used. Valves and fittings need to be installed also to connect the first-class pipework to the second-class pipework. No cheap alternatives will be allowed in the installation and pipes and fittings shall bear the manufacturer's stamp or markings. Pipes and/or fittings found not to

adhere with this requirement shall be replaced at no additional cost to the contract.

Drip pipe for the irrigation shall be made out of black UV-resistant rubber, with an outer diameter of 16 mm. It shall be able to deliver required flow rates for different types of trees and plants.

### **2.2.2 Pipe Terminations**

All pipe runs shall be terminated at the angle valve or bib cock and shall include provision and installation of the respective angle valves and bib cocks.

### **2.2.3 Pipe Fittings**

#### *General*

All accessories used in the system shall be of the same manufacture as the pipe unless the fitting required is not available in the manufacturer's range of equipment to compliment the pipes. In this case, any item used shall be fully compatible with the pipe system and literature shall be supplied with the offer to substantiate this claim.

#### *Bronze Ball Regulation Valves*

- a. Valves shall be of the same manufacture as the pipes on which they are installed and fully compatible with the system being used. However, if these are unavailable from the pipe system manufacturer, they shall conform to the specifications detailed below.
- b. The valves shall be manufactured to high quality standards conforming to BS 5159 and shall be suitable for hot and cold installations. They should be depended upon to close efficiently even after long periods of fully open service. Each valve must permit straight through flow with minimum disturbance to the fluid.
- c. They shall have a polished ball and smooth seats to give 100% bubble-tight sealing. The valve body shall be made of bronze to BS 1400 LGZ. The ball shall be made of the following materials:  
1/4" to 2" diameter – Dezincification resistant brass to BS 2872 CZ 132  
2 1/2" to 4" diameter – Bronze to BS 1400 LG2

- d. The ball seat shall be made of PTFE. The valve stem shall be made of dezincification resistant brass to BS 2874 CZ 132. The valve lever shall be made of zinc plated mild steel covered in PVC. Should a lock shield be required, the cover shall be made of brass to BS 2872 CZ 122 with nylon cover.

#### **2.2.4 Solenoid Valves**

Solenoid valves shall be to the following specifications:

- a. Connections shall be female at both ends.
- b. Valves shall be capable of flow control.
- c. Globe configuration.
- d. Heavy duty, corrosion and UV resistant construction.
- e. Rubber thermoplastic Diaphragm.
- f. Manual internal bleed.
- g. Slow closing design with flow-path designed to minimize pressure loss.
- h. Working pressure from at least 1.3 bars to at least 8 bar.
- i. Valve shall operate on a low voltage AC source.

#### **2.2.5 Other valves**

Other valves shall also be of the same manufacture as the pipes on which they are installed and fully compatible with the system being used. They shall be also suitable for both first and second-class installation according to the drawings.

The remaining valves shall consist of the following types:

- a. Non-return, to stop flow in reverse direction after water exits from pump discharge.
- b. Foot valves, made of suitable material, complete with bronze strainer, one for each pump.

Valve bodies shall be made out of bronze and shall be suitable for installation on required pipe diameters as per drawings.

### **2.3 PUMPS**

#### **2.3.1 Pumps**

Both pumps required to be surface pumps. Both of these are required to be able to have a suction lift which matches the reservoir water depth, about 5 m below the pump room.

Second class water valves and connection points will be marked clearly to indicate that it is not potable.

All pumps shall be suitable to work with water of a maximum temperature of 40°C.

Suitable filters shall be installed at each pump suction end to block any particles found inside the reservoir water which may damage the pump components. These filters shall have connections which make them suitable for connection to the inlets of each pump. Filters shall be of the strainer type, which shall make it easier for the filter to be removed, cleaned and refitted.

The following pumps shall be suitable for use with clean or slightly dirty surface water.

**It is imperative to note that:**

- a) Both pumps shall have multiple float switch or level switch connections together with the necessary length of cable required for these devices to be connected to the pumps for them not to run on dry conditions. These devices shall switch off the pumps when the reservoir water level decreases.
- b) A float switch shall be connected to the small pump at 2.3.2 (II)
- c) Since these pumps shall not be installed in flooded suction conditions, a length of pipe terminating in a foot valve shall be connected to each pump.

**2.3.2 Pump specifications**

(I) Pump to be used for irrigation:

- Delivery of **20 m<sup>3</sup>/h at 6 bar pressure**: required for irrigation.
- It shall be of the horizontal, close-coupled, multi stage type.
- Suitable for continuous duty.
- Main components, like Casing and Impeller, made of suitable materials like chrome-nickel steel

- Shaft made of Stainless Steel.
- It shall have two appropriate rubber mechanical seals installed.
- Electric motor shall of the 2-pole 50 Hz induction type.
- Insulation class: F and motor shall have an IP 54 classification.
- Power connections: three-phase 400V 50 Hz supply.
- Inlet/Outlet: threaded.
- Outlet diameter: 50mm.

(II) Pump to be used for filling water tank on roof:

- Specifications required: **3 m<sup>3</sup>/h at 2.0 bar pressure.**
- Main components, like Casing and Impeller, made out of suitable materials.
- Shaft made of Stainless Steel.
- Electric motor shall of the 2-pole 50 Hz induction type.
- Insulation class: F and motor shall have an IP 54 classification.
- Power connections: single-phase 240V 50 Hz supply.
- Inlet/Outlet: threaded.
- Outlet diameter: 1".
- This pump shall be connected to an MCB and controlled via a float switch.

### 2.3.3 Pump Control Panel

There shall be a Motor control panel which shall house all the equipment to switch on/off and monitor all the equipment. This panel shall control the large, main pump at 2.3.2 (I). The enclosure shall be to IP55. The panel shall be able to accommodate the operation of the fountain. It shall include at least the following:

- Frequency inverter for Irrigation pump

- Duty/Standby selector for each pump
- Overload Protection
- Run/Trip Indicator
- Auto/Manual Selector Switch
- Level switch or float switch connection to be connected to pumps' control panel to switch these off when the reservoir's level is low.

#### **2.3.4 Pump Room**

A room, situated in the basement of the Local Council building, shall be used to house both pumps, control panel, manifold and other equipment. Concrete plinths shall be constructed for the pumps to be detached from floor level. Rubber mountings shall be inserted between concrete and pumps bases to minimise vibrations. Connection fittings shall be made of stainless steel. This room contains both single and three-phase electrical supplies.

#### **2.3.5 Valve Boxes**

Valve Boxes may be circular, square or rectangular. Size and shape shall be suitable for ease of use of the valves located within them. They shall be constricted from high density polyethylene structural foam. Openings shall be included for the installation of pipes through the box walls.

Valve box covers shall be lockable with a key. They shall come complete with HDPE covers and these shall withstand the load rating of at least 17kg/sq.cm. They shall withstand temperatures of up to 73 deg, C without deflection as per (ISO 75-1). HDPE density shall be to ISO 8962.

#### **2.3.6 Irrigation Controller**

(1) The controller shall be suitable to drip irrigate shrubs, trees and other plants. It shall comply with the following specification:

- Dual program
- LCD display with simple icons
- Alarm symbols.
- Programming keypad
- Indicator lamps showing controller status, green for on and red for alarm.

- Program override for rainy weather shutoff.
- Automatic diagnosis indicating which station has a fault.
- Circuit including rechargeable battery pack for maintenance of program in case of power failure.
- Battery to maintain an emergency program for 4 days in case of extended power failure.

(2) Controller shall be housed in a plastic cabinet which shall either be lockable or else be equipped with a facility to accept a padlock. Cabinet shall be suitable for wall mounting and shall be weather proof.

(3) The controller shall operate on a 240V, 50Hz electrical supply. It shall have the capacity to operate at least two (2) solenoid valves per station plus a master valve or pump start relay. It shall be able to be programmed and timed according to the client/operator wishes. Each programme shall be capable of at least 8 automatic starts. The controller shall have inbuilt surge protection.

(4) The controller shall be capable of having the following accessories connected to it:

- Automatic Rain shutoff device.

(5) GPP criteria:

- The irrigation system must be adjustable in terms of volume of dispensed water by zones.
- The irrigation system must have adjustable timers, to programme the watering period.
- The irrigation system must have hygrometers that measure soil humidity levels and automatically block irrigation when the humidity level of soil is high enough (for example after rain).

**Bidders must provide adequate documentation demonstrating that these criteria are met.**

## **2.4 INSTALLATION**

### **2.4.1 Workmanship**

Except where otherwise stated, workmanship shall comply with European Codes of Practice, where applicable. A high standard shall be maintained throughout the installations. The contractor shall ensure that the standard of finish demanded by this contract is achieved. Branded materials shall be assembled, constructed and joined in accordance with the manufacturer's instructions and recommendations.

### **2.4.2 Pipes**

Pipes in garden passages shall be run, through pipe sleeves, in trenches prepared by the tenderer. Sleeves shall be secured with mortar. Trenches shall be run beneath the garden paving and the pipes shall be laid at a depth of at least 150 - 200mm. Any slabs/tiles shall be **removed carefully**, then **cleaned** and **reinstalled back** when the trenches, sleeves and pipe installation is completed. Each different ring main shall be colour coded. It shall be up to the contractor to decide whether to mark the pipe with appropriate different colored paint or identification tape. If paint is used this shall be compatible with the pipe material and shall not react chemically or in any way damage the pipe material.

### **2.4.3 Valves**

Surface installed valves shall be located in valve boxes. These valves shall also be color coded to match the pipe circuits.

## **2.5 TESTING AND COMMISSIONING**

### **2.5.1 General**

(1) All the works provided as part of the contract shall be inspected and commissioned in accordance with all relevant European Standard Specifications and Codes of Practice to the satisfaction of the Engineer. All installations shall be inspected and tested in sections as the work proceeds and on completion as complete systems and it shall be noted that the Engineer may require inspecting or testing of any equipment during installation.

(2) All tests shall be arranged in co-operation with the Engineer and he shall be given prior notice of the time, location and nature of the test. No test shall be considered valid unless the Engineer is present. All necessary skilled and unskilled labour shall be provided for attendance duties before, during and after the test and the test media shall be provided and subsequently disposed of except where otherwise specified.

(3) Defects occurring at any time during the test shall be made good and a complete re-test shall be carried out, all at no extra cost. Where failure during a test, inspection or commissioning process results in damage to the building fabric and/or services not provided as part of this contract, or requires subsequent builders' work then these items shall be made good at no extra cost.

(4) All test points shall be provided which are necessary to carry out the specified tests and commissioning requirements. Such points shall be fitted with removable plugs, flanges or other approved devices. No section of the works shall be in any way concealed prior to testing and inspection. Subsequent concealment, where applicable, shall only take place following written authority from the Engineer.

(5) All necessary facilities, measuring and recording instruments including test pumps and gauges for inspection/testing and commissioning are to be calibrated as necessary before use. The Engineer reserves the right to call for a demonstration of the accuracy of any instrument used.

### **2.5.2 Commissioning**

All systems shall be filled with the working fluid, vented and brought to operating conditions and the flows then regulated to the design values. Following regulation and balancing procedures all systems shall be put into operation and examined to ensure that the installations are operating correctly.

A commissioning report shall be consigned to the engineer, correctly endorsed. The report shall have to be endorsed by the engineer, prior to any approval of payments.

### **2.5.3 Record Drawings**

The Contractor shall provide drawings to a scale not less than 1:100. These shall show plans and such sections as the Engineer may consider necessary. Final copies shall consist of *two* **prints** of each drawing together with *one* **soft copy** of all the drawings. The final copies of the 'As fitted' drawings shall be submitted to the Engineer within three months of the completion of the contract. The final certificate will not be authorised until the drawings are received by the Engineer to his satisfaction.

### **3. Literature**

The bidder is to provide literature relating to the irrigation system and materials to be used as per Annex 6.

**ANNEX 5**  
**FINANCIAL OFFER**

Item	Description	Qty	Unit	Rate Incl. Taxes, other Duties & Discounts but Exc. VAT €	Amount Incl. Taxes, other Duties & Discounts but Exc. VAT €
	<b><u>Bill No. 1 - Civil Works</u></b>				
1.1	Excavate in vegetable soil and level excavated soil in adjoining planters approximate dimensions 2200mm X 2200mm x 2000mm deep, construct concrete grade C25 floor slab 2000mm x 2000mm x 900mm x 150mm thick including 1no. BRC mesh fabric C503 and trowelled smooth, construct 3no. walls to chamber (internal dimension of chamber 1770mm x 1540mm x approx. 1800mm high) comprising of 230mm thick block walls (Bricks) single type filled with C25 concrete, construct roof slab concrete grade C25 size 2000mm x 2000mm x 150mm thick including 1no. BRC mesh fabric C503, roof is to include for the supply and fix of 600mm x 600mm cast iron frame and cover. Lump sum is to include for the trowelled smooth to top of slab and supply and lay torch welded waterproofing membrane with a density of 4kg per Sq.mtr.		Lump Sum		

1.2	Form opening in double leaf wall approximate thickness 500mm for duct and make good. Excavate pit in existing material (soil/made up ground) to construct inspection manhole internal dimensions 600mm x 600mm, rate for excavation is to include for any dumping fees for excavated material, vegetable soil is to be spread on site. construct inspection chamber comprising of 230mm thick brick walls single type filled with C25 concrete and the supply and fix heavy duty uPVC frame and lid, take up existing 200mm x 100mm x 60mm thick concrete paving block, clean and set aside for later re-laying, excavate trench in any type of material and remove from site approximate dimension of trench 4000 mm x 300mm x 1500mm deep, provide and lay in trench 150mm diameter uPVC including C25 concrete surround and backfill up to the required level with C10 lean mix and re-lay paving blocks previously set aside and grout with suitable material.		Lump Sum		
				c/f	
Item	Description	Qty	Unit	Rate Incl. Taxes, other Duties & Discounts but Exc. VAT €	Amount Incl. Taxes, other Duties & Discounts but Exc. VAT €
				b/f	

1.4	Provide and paint in two coats with impermeable material as approved by the Architect in Charge. Rate is to include for the remedial works where cracks exist with suitable material. Contractor is to provide all the necessary illumination for suitable vision for working and to provide proof that all areas are painted. The contractor is to make the necessary testing by an accredited testing company by filling the reservoir with water and frequently surveying the water depths. This survey is to be presented duly signed by an authorised person employed with the testing agency.	350	sq.m		
1.5	Construct continuous storm water catchment pits/gutters CP04 across the road having internal diameters of 530mm x 530mm x 7500mm inclusive of silt trap sump approximate size 1200mm x 1200mm x 1900mm all as per attached drawings. Rate is to include the necessary cutting of existing road with a rotary saw and the blacktop reinstatement, including the sealing of joints with hot tar.	1.00	no.		
1.6	Construct continuous storm water catchment pits/gutters CP04 across the road having internal diameters of 530mm x 530mm x 7000mm inclusive of silt trap sump approximate size 1200mm x 1200mm x 1900mm all as per attached drawings. Rate is to include for the necessary cutting of existing road with a rotary saw and the blacktop reinstatement, including the sealing of joints with hot tar.	1.00	no.		
1.7	Connect item 7 and item 8 to existing stormwater culvert.	2.00	no.		
<b>Bill No. 1 - Civil Works - Carried to Summary</b>				€	

Item	Description	Qty	Unit	Rate Incl. Taxes, other Duties & Discounts but Exc. VAT €	Amount Incl. Taxes, other Duties & Discounts but Exc. VAT €
	<b><u>Bill No. 2 - Installation of an Irrigation System</u></b>				
2.1	Manifold of pipe Diameter = 100 mm, at least	1	No.		
	<b>Supply and installation of valves as described below:</b>				
	<b>Stopcocks</b>				
2.2	16 mm diameter	152	No.		
2.3	32 mm diameter	3	No.		
	<b>Ball</b>				
2.4	15 mm diameter	18	No.		
2.5	25 mm diameter	6	No.		
2.6	32 mm diameter	6	No.		
2.7	50 mm diameter	8	No.		
2.8	63 mm diameter	1	No.		
	<b>Non-return</b>				
2.9	63 mm diameter	1	No.		
2.10	32 mm diameter	1	No.		
	<b>Foot</b>				
2.11	32 mm diameter	2	No.		
	<b>Solenoid</b>				
2.12	To withstand pump duty in 2.14 below	6	No.		
	<b>Pressure Reducing</b>				

2.13	63 mm diameter	1	No.		
				c/f	
Item	Description	Qty	Unit	Rate Incl. Taxes, other Duties & Discounts but Exc. VAT €	Amount Incl. Taxes, other Duties & Discounts but Exc. VAT €
				b/f	
	<b>Supply and installation of horizontal multi-stage surface pump as specified with the following duties:</b>				
2.14	Pump duty shall be <b>20 m³/h at 6 bar</b> pressure.	1	No.		
2.15	Surface pump: duty shall be <b>3 m³/h at 2 bar</b> pressure.	1	No.		
2.16	Control panel(s) for pumps, with all necessary electrical fittings.		Lump Sum		
	<b>Pipework for irrigation, according to specifications, rated PN6. Pipes in passageway are to pass through sleeves which shall be run in trenches; price for the formation of trenches and reinstatement of floor finish to be included in the rates.</b>				
2.17	15 mm diameter	275	m		
2.18	25 mm diameter	195	m		
2.19	32 mm diameter	155	m		
2.20	50 mm diameter	135	m		
2.21	16 mm diameter drip pipes as specified	600	m		

	<b>Supply and installation of fittings like tees, elbows, saddles for solenoid valves including any supports. This item shall also include chasing in ground where and as required.</b>				
2.22	Pipes shall be secured using an approved method.		Lump Sum		
2.23	Irrigation circuit controller - 6 way, as specified	1	No.		
	<b>Inspection boxes, for being able to inspect pipes, fittings or merely to pull pipe during installation</b>				
2.24	200 x 200 x 250 mm deep	80	No.		
2.25	500 x 300 x 300 mm deep	4	No.		
				c/f	
Item	Description	Qty	Unit	Rate Incl. Taxes, other Duties & Discounts but Exc. VAT €	Amount Incl. Taxes, other Duties & Discounts but Exc. VAT €
				b/f	
	<b>PVC pipes to be used as sleeves, as follows:</b>				
2.26	40 mm diameter	350	m		
2.27	50 mm diameter	35	m		
2.28	80 mm diameter	45	m		
2.29	Connecting-up of equipment to existing electrical supply.		Lump Sum		
2.30	Supply of 2 sets hard copies and 1 soft copy of 'As fitted' drawings, as specified.		Lump Sum		

2.31	Testing and commissioning of the complete system.		Lump Sum		
	<b>Bill No. 2 - Installation of an Irrigation System - Carried to Summary</b>			€	

### Summary

Bill No. 1 - Civil Works	
Bill No. 2 - Installation of an Irrigation System	
<b>Total (Inc. VAT)</b>	

Name of Tenderer: \_\_\_\_\_ Date: \_\_\_\_\_

Signature: \_\_\_\_\_ ID. No.: \_\_\_\_\_

## ANNEX 6

### LITERATURE

List of literature to be submitted with the quotation as per Technical Specifications requested in the tender document.

Item	Description	Insert an X to confirm that relevant document is submitted
1.1	Pipes	
1.2	Solenoid valves	
1.3	Ball valves	
1.4	Non-return valves	
1.5	Foot valves	
1.6	Float switch	
1.7	Level switch	
1.8	Pumps	
1.9	Pump control panel	
1.10	Irrigation controller	
1.11	Valve boxes	
2.1	D400 Cast Iron Ductile Gratings (600x500)	
2.2	Fast set rapid strenght concrete	
2.3	Fast set rapid strenght bedding mortar	
2.4	Bitumen cold joint sealer cold spray	
2.5	Cold lay asphalt concrete	

2.6	Impermeable material to be applied to walls of reservoir (internally)	
-----	---	--

I, \_\_\_\_\_ (*signature of the person or persons authorised to sign on behalf of the bidder*) confirm that all relevant documentation is submitted.


Date: \_\_\_\_\_

**ANNEX 7**  
**DRAWINGS & PLANS**

- a) Existing Reservoir Plan
- b) Existing Section of Reservoir
- c) Plan for Catchment Pits
- d) Plan for Irrigation System
- e) Plan for Pump Room



EXISTING RESERVOIR PLAN



Ministry for Transport and Infrastructure  
Works & Infrastructure  
Department  
Valley Management Unit

PROJECT TITLE :  
Paola Boffa Garden Alteraqua Project

REF :  
--

CLIENT :  
Local Council

PROJECT No. :  
1502

DRAWING TITLE :  
EXISTING RESERVOIR PLAN

DWG. N° :  
05

DIRECTOR GENERAL :  
R.FARRUCIA

DIRECTOR :  
--

HEAD OF SECTION :  
S.BONELLO

ARCHITECT/PLANNER :  
--

SCIENTIFIC OFFICER :  
A.BORG

DRAUGHTSMAN :  
--

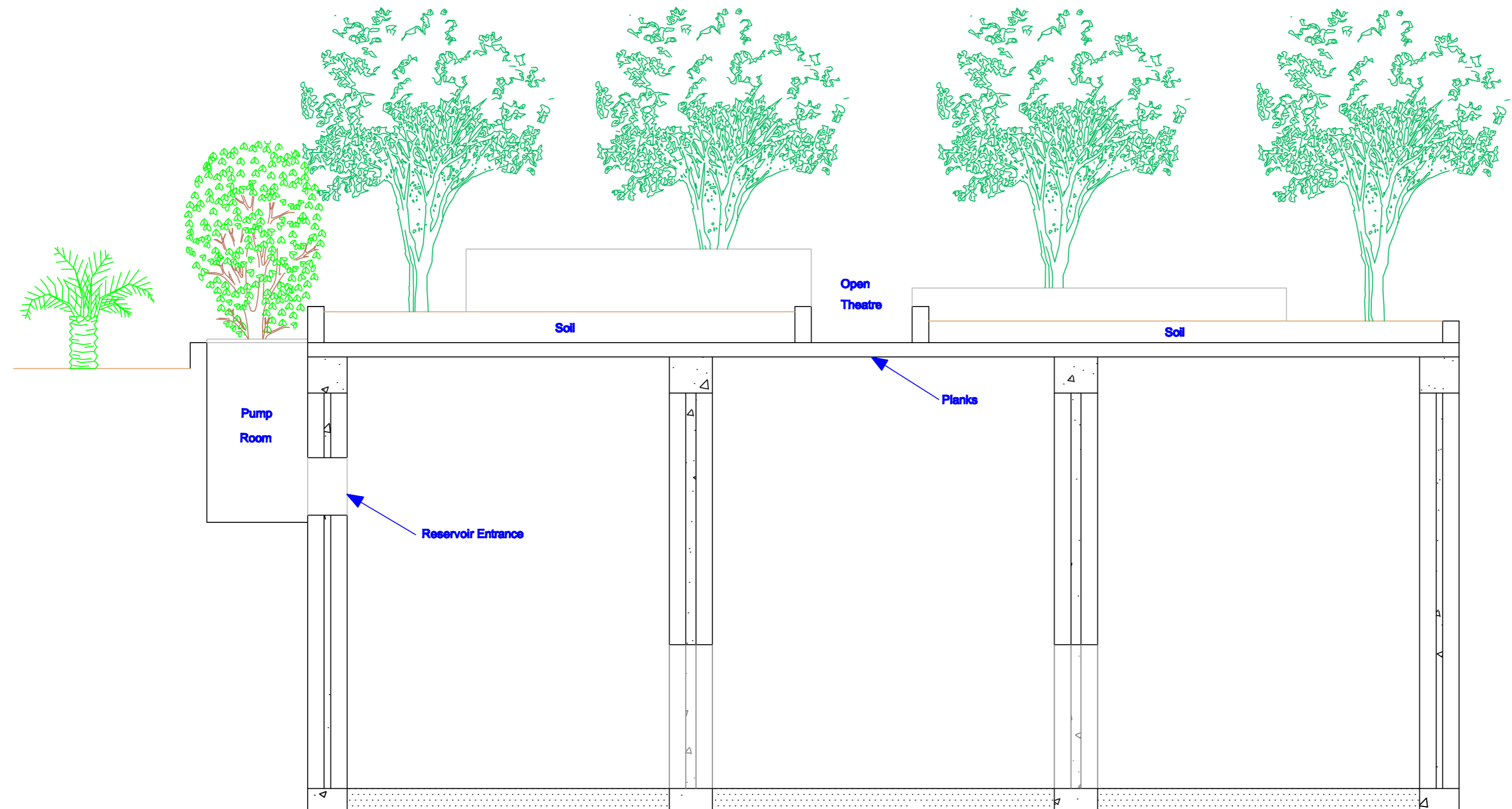
DATE :  
24-04-15

REVISION N° :  
--

DRAWN BY:  
J.CARUANA

WD. FILE :  
--

SCALE :  
1:50



Section of Reservoir from St Joseph str to Sisters str

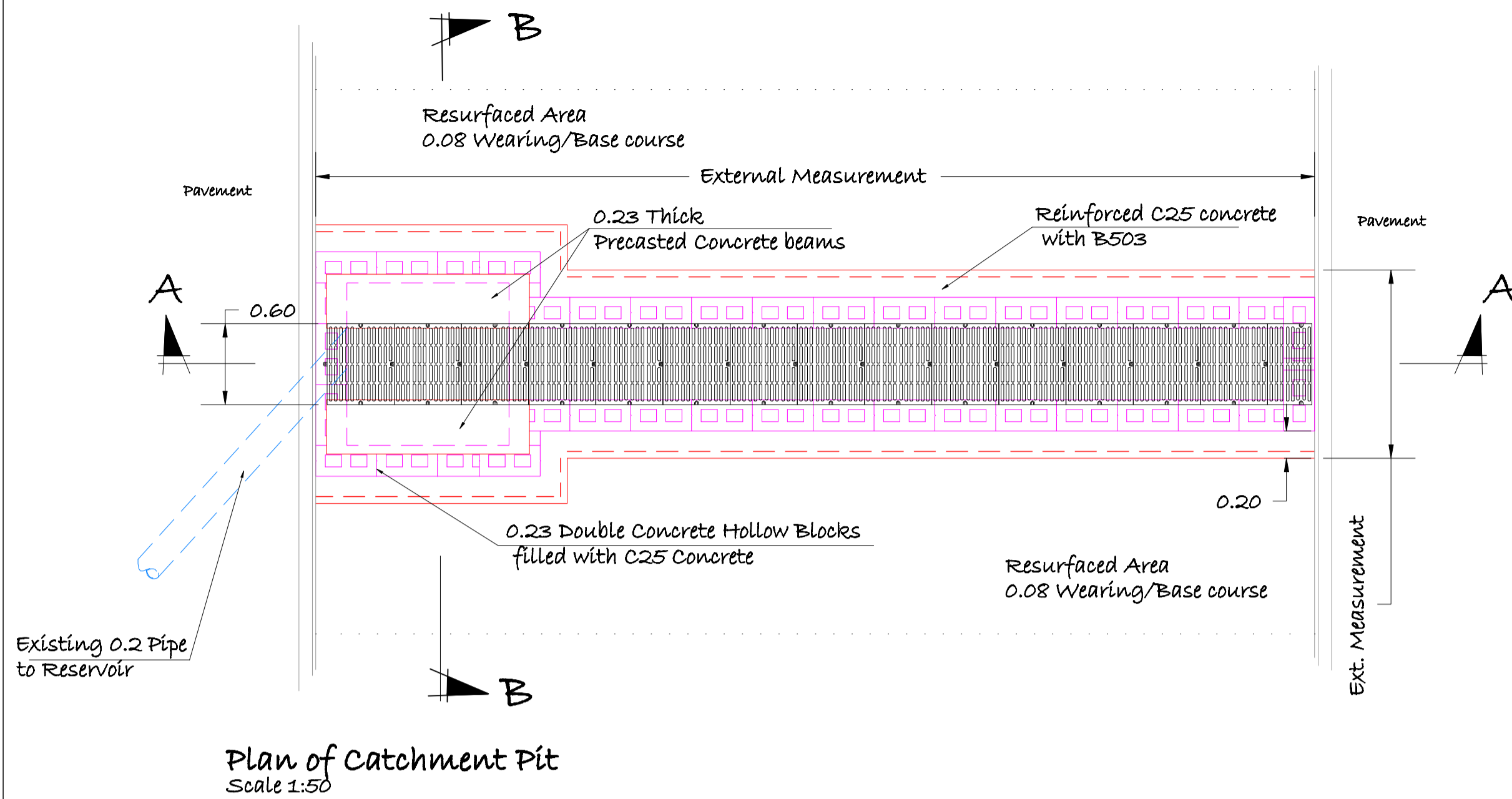
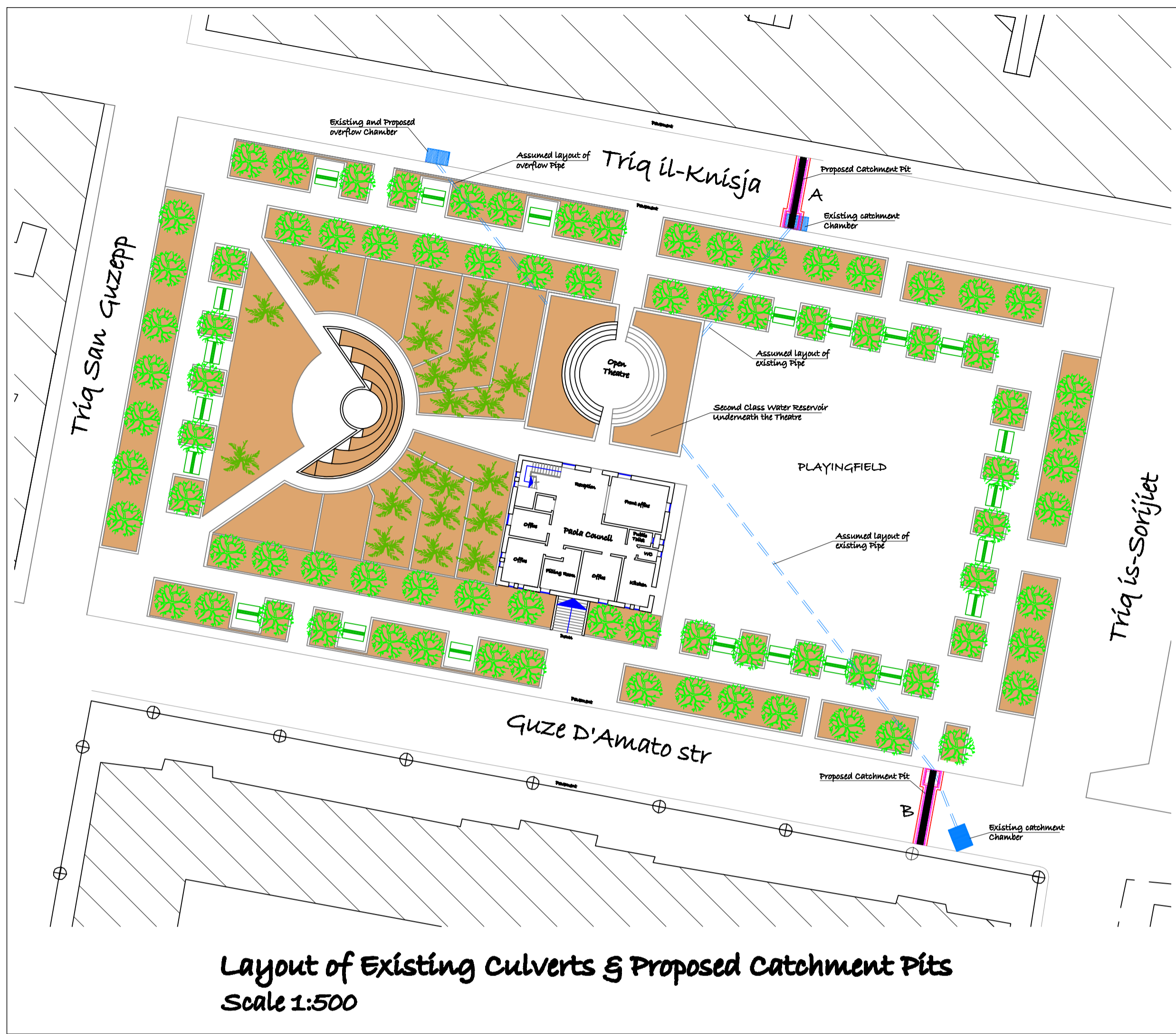
Ministry for Transport and Infrastructure

Works & Infrastructure  
Department

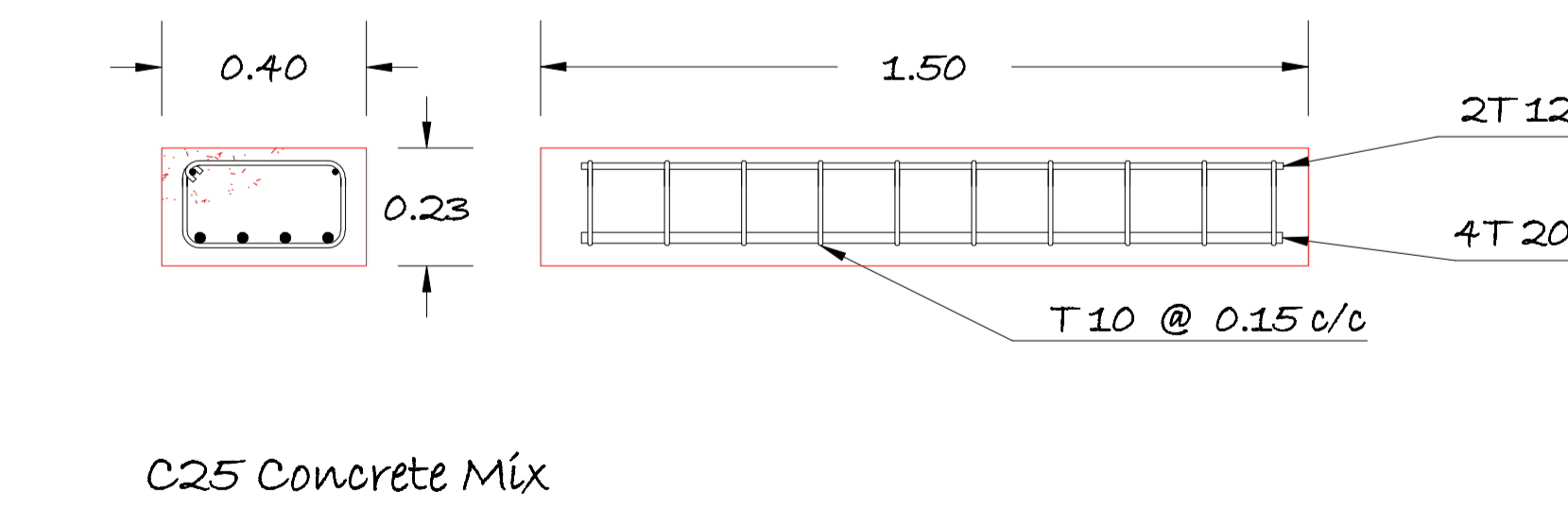
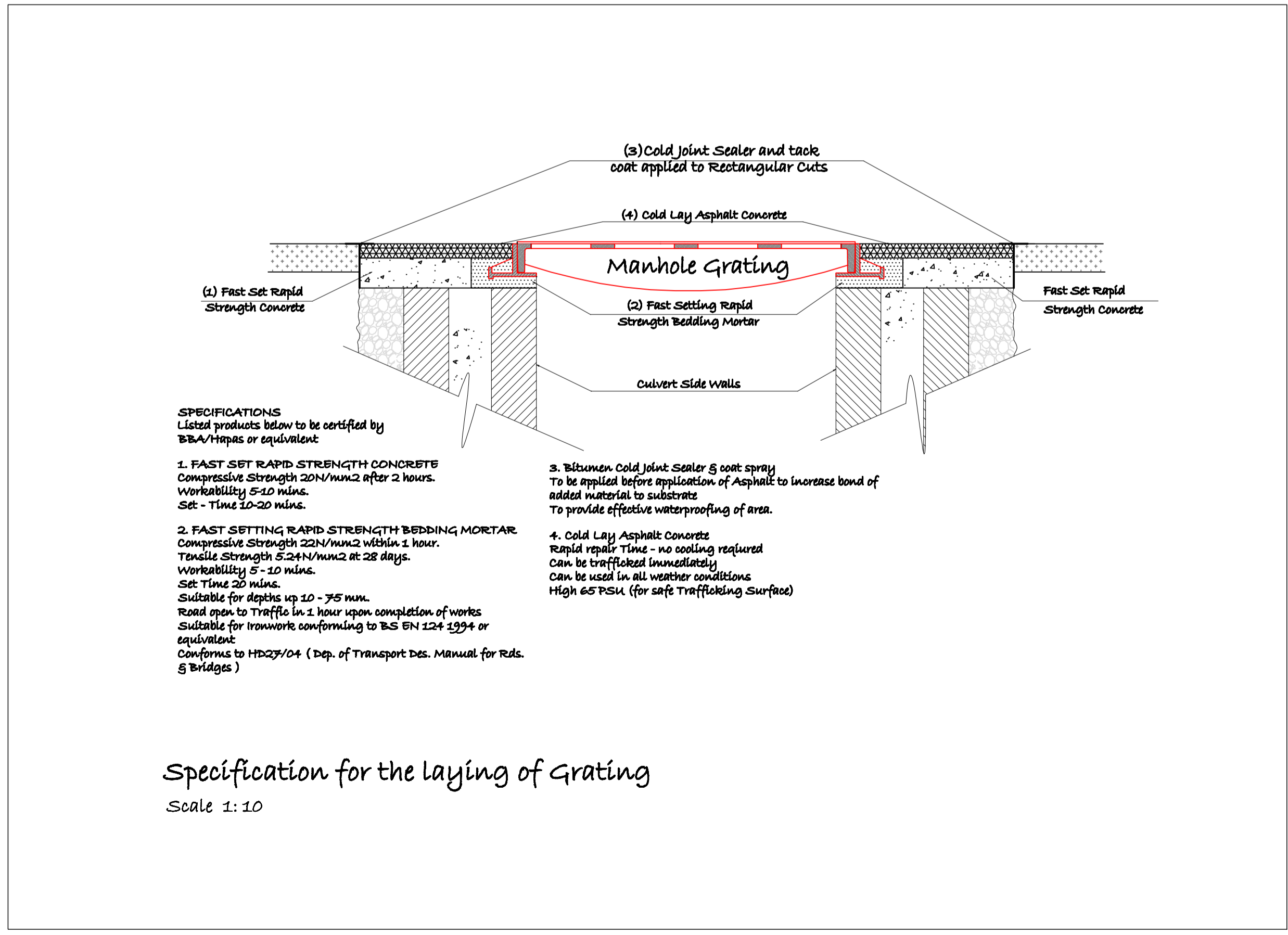
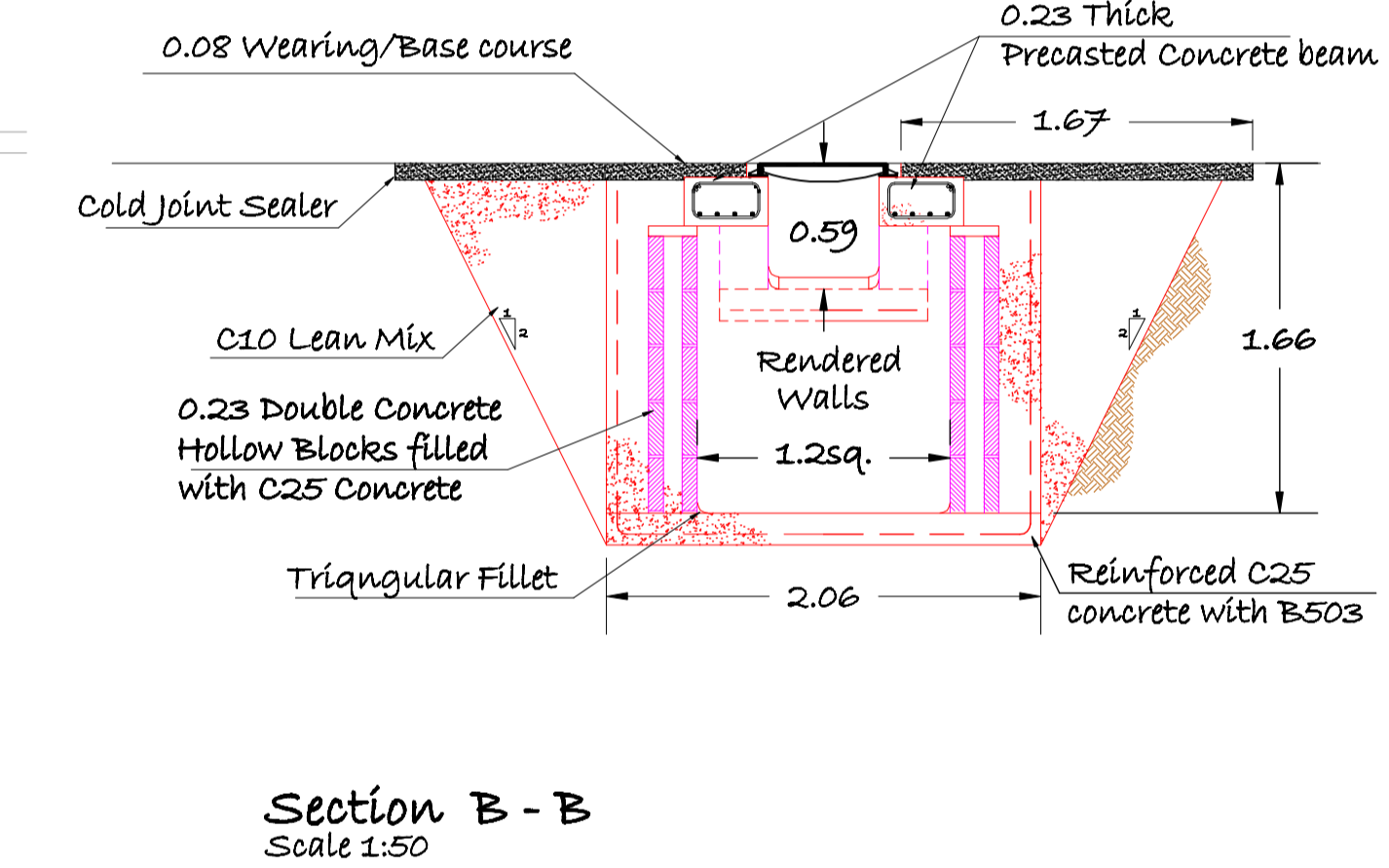
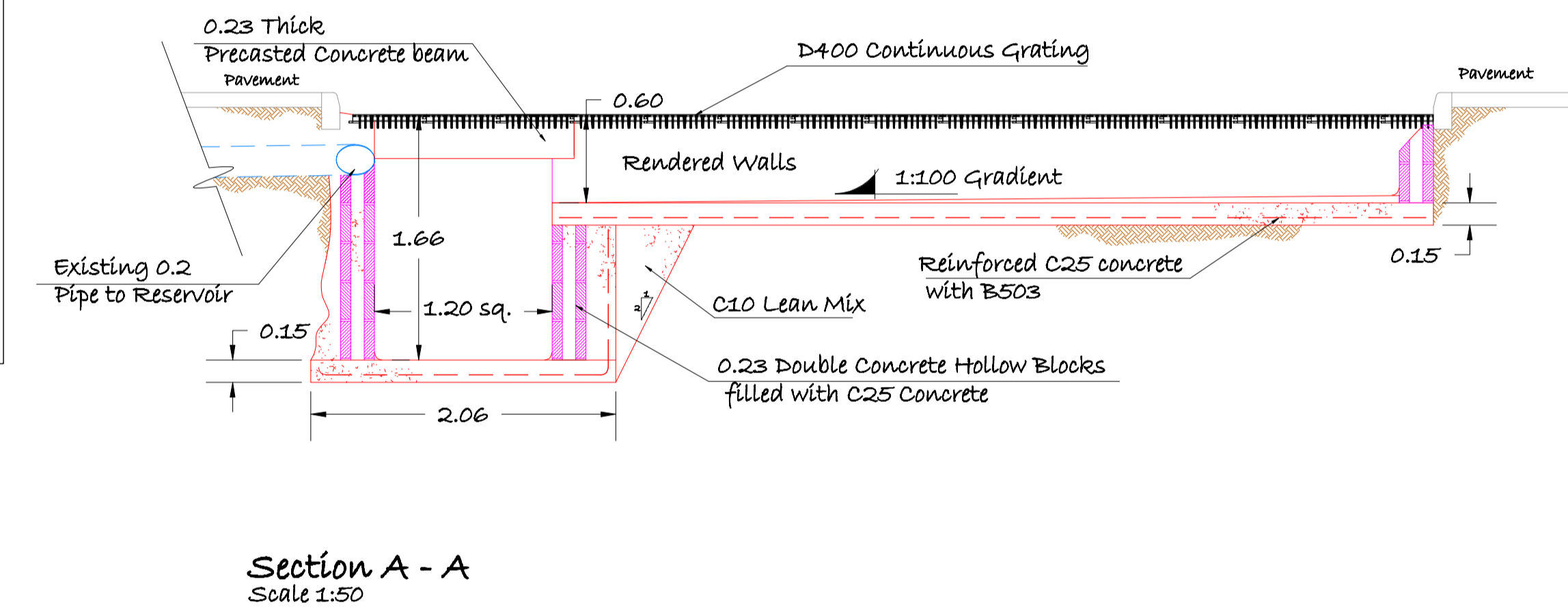
Valley Management Unit

'PROJECT HOUSE'  
FLORIANA, MALTA.  
Tel: 21 221411/0

PROJECT TITLE : Paola Boffa Garden Alteraqua Project		REF : --
CLIENT : Local Council		PROJECT No. : 1502
DRAWING TITLE : SECTION OF RESERVOIR		DWG. N° : 05
DIRECTOR GENERAL : R.FARRUCIA		SCALE : 1:50
HEAD OF SECTION : S.BONELLO	DIRECTOR : --	DATE : 22/04/15
SCIENTIFIC OFFICER : A.BORG	ARCHITECT/PLANNER : --	REVISION N° : --
	DRAUGHTSMAN : --	DRAWN BY: J.CARUANA
		WD. FILE : --



External Measurements		
Catchment Pit A	7.10m	x 1.39
Catchment Pit B	7.45m	x 1.39
Both Catchment Pits include sump measuring 1.20 x 1.20 x 1.66		



**NOTE:**

- All internal rendering of brick work is to be M4 = 1:2:8 (cement/lime/sand)
- Mortar for Brick Laying must be M2 = 1:1:5 (cement/lime/sand)
- Min. Compressive strength of Double Load Bearing Concrete Blocks = 7N/mm<sup>2</sup>
- All dimensions are in metres

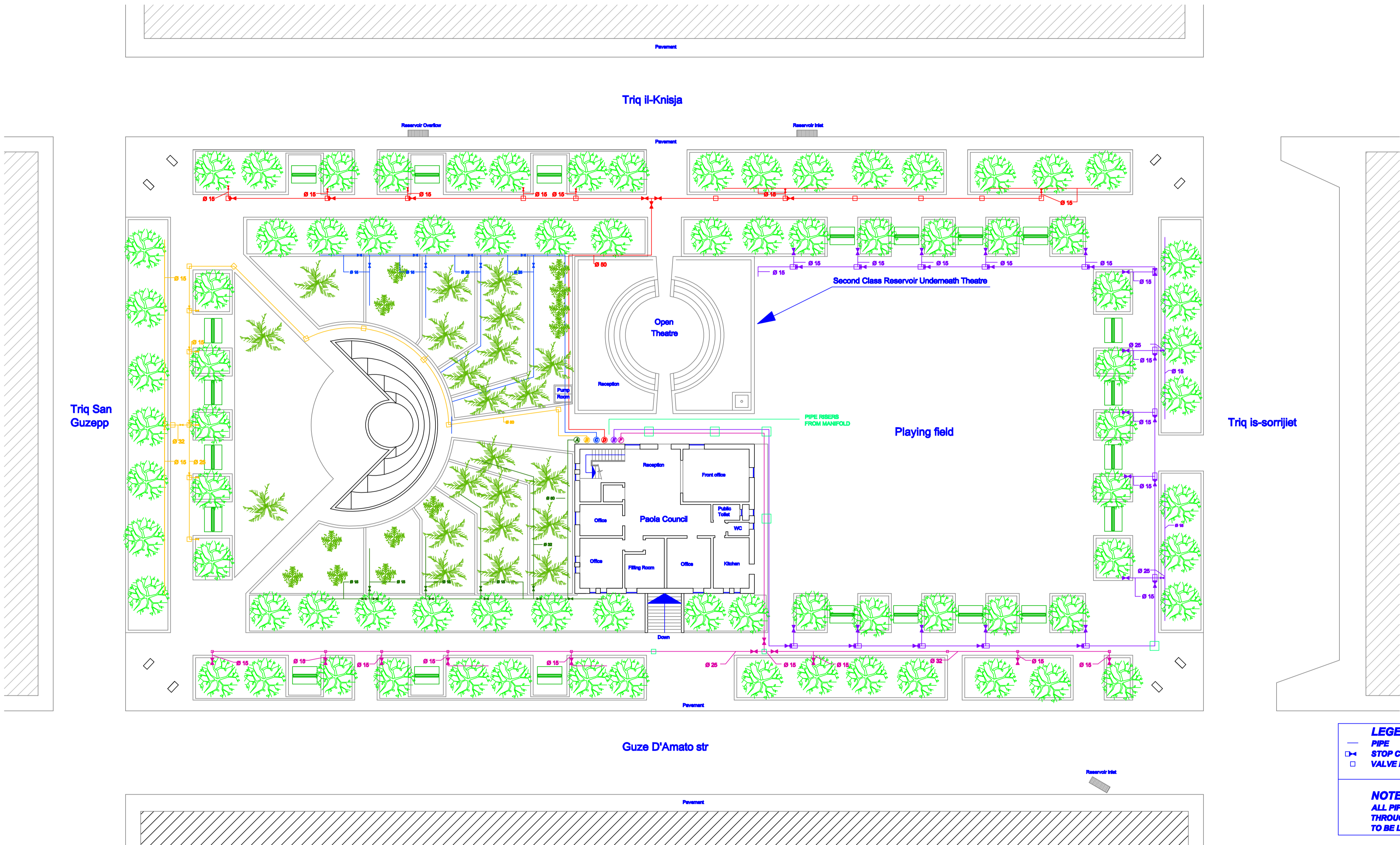
Ministry of Transport and Infrastructure

Marine, Storm Water & Valley Management Unit

Works and Infrastructure Directorate

'PROJECT HOUSE'  
FLORIANA, MALTA.  
Tel: 21 221411/0

PROJECT TITLE : <b>Pawlu Boffa Garden - Paola</b>		REF : <b>PBG-001</b>
CLIENT : <b>STORM WATER UNIT</b>		DWG No. : <b>07</b>
DRAWING TITLE : <b>Layout, Sections &amp; Details of Proposed Catchment Pits</b>		PROJECT N° : <b>1502</b>
DIRECTOR GENERAL : <b>R. FARRUGIA</b>	DIRECTOR : <b>S. BONELLO</b>	SCALE : <b>1:500/ 1:50/ 1:20/ 1:10</b>
HEAD OF SECTION : <b>G. SCHEMBRI</b>	ARCHITECT/PLANNER : <b>G. SCHEMBRI</b>	DATE : <b>14/04/2015</b>
SURVEYED BY : <b>-----</b>	DRAWN BY : <b>JDV</b>	REVISION N° :
		CHECKED BY:
		MTI FILE :

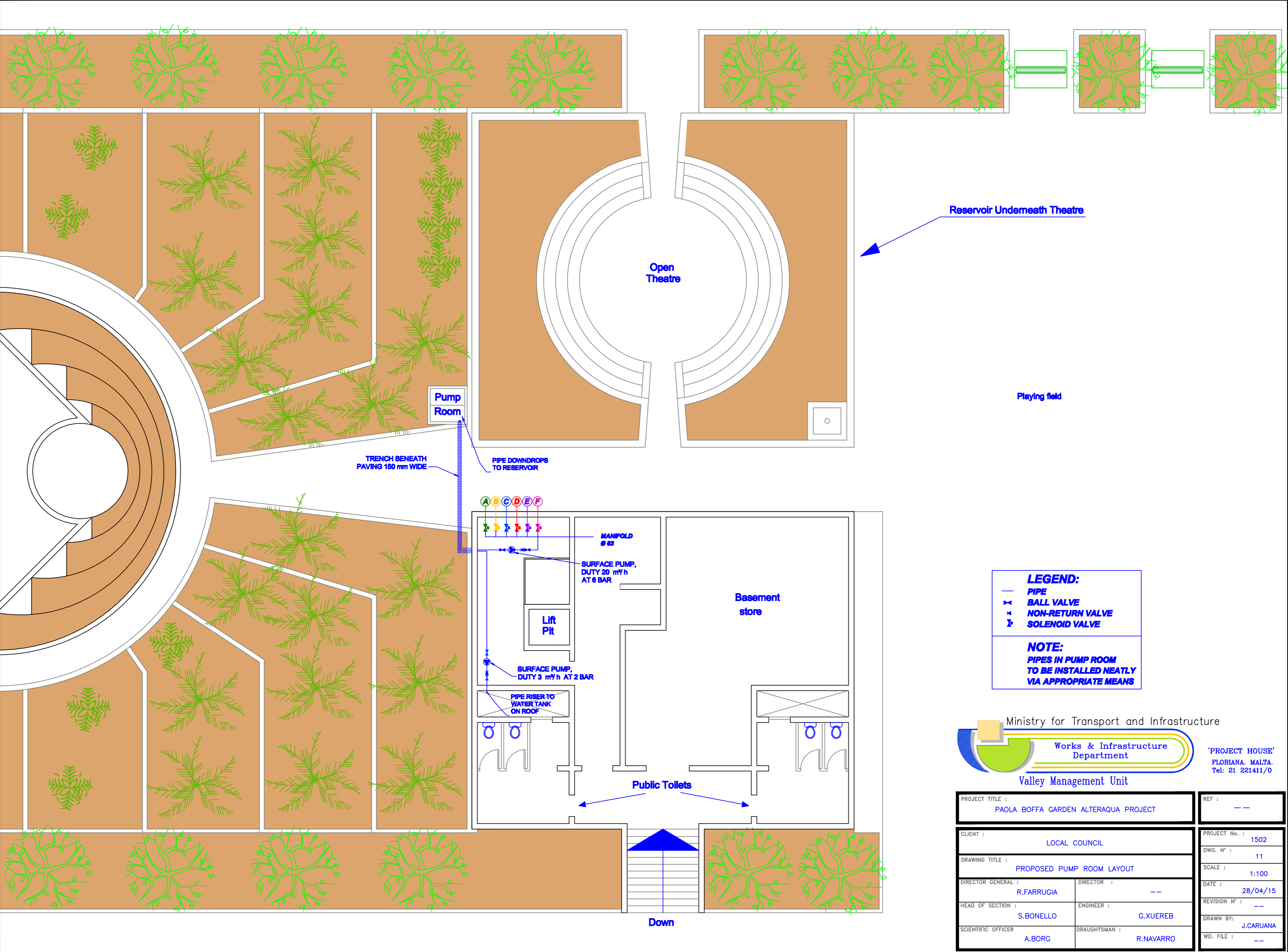


**LEGEND:**

- PIPE
- STOP COCK
- VALVE BOX

**NOTE:**  
ALL PIPES PASSING THROUGH PASSAGEWAYS TO BE LAID IN TRENCHES

Ministry for Transport and Infrastructure			
Works & Infrastructure Department			
VALLEY MANAGEMENT UNIT			
PROJECT TITLE : Paola Boffa Garden Alteraqua Project		REF : --	
CLIENT : Local Council		PROJECT No. : 1502	
DRAWING TITLE : IRRIGATION SYSTEM LAYOUT		DWG. N° : 10	
DIRECTOR GENERAL : R.FARRUGIA		SCALE : 1:200	
HEAD OF SECTION : S.BONELLO		DATE : 27/03/15	
SCIENTIFIC OFFICER : A.BORG		REVISION N° : --	
		DRAWN BY : J.CARUANA	
		WD. FILE : --	
		DRAUGHTSMAN : R. NAVARRO	



Ministry for Transport and Infrastructure	
Works & Infrastructure Department	
Valley Management Unit	
PROJECT TITLE : PAOLA BOFFA GARDEN ALTERAQUA PROJECT	REF : --
CLIENT : LOCAL COUNCIL	PROJECT No. : 1502
DRAWING TITLE : PROPOSED PUMP ROOM LAYOUT	DWG. N° : 11
DIRECTOR GENERAL : R.FARRUGIA	SCALE : 1:100
HEAD OF SECTION : S.BONELLO	DATE : 28/04/15
SCIENTIFIC OFFICER : A.BORG	REVISION N° : --
	DRAWN BY : J.CARUANA
	WD. FILE : --
	DIRECTOR : --
	ENGINEER : G.XUEREB
	DRAUGHTSMAN : R.NAVARRO