Improvement works at Gypsou/Akova cemetery, Famagusta

Site Identification

- **GPS identification:** 35°15'44.97"N, 33°47'40.20"E
- **Site Category:** Village cemetery
- **Original Use:** Cemetery
- **Current Use:** Not in use
- **Materials:** Sandstone rubble stone, plastered on both sides and finish with a capping mortar
- **Approximate Area:** 3685.5 m²

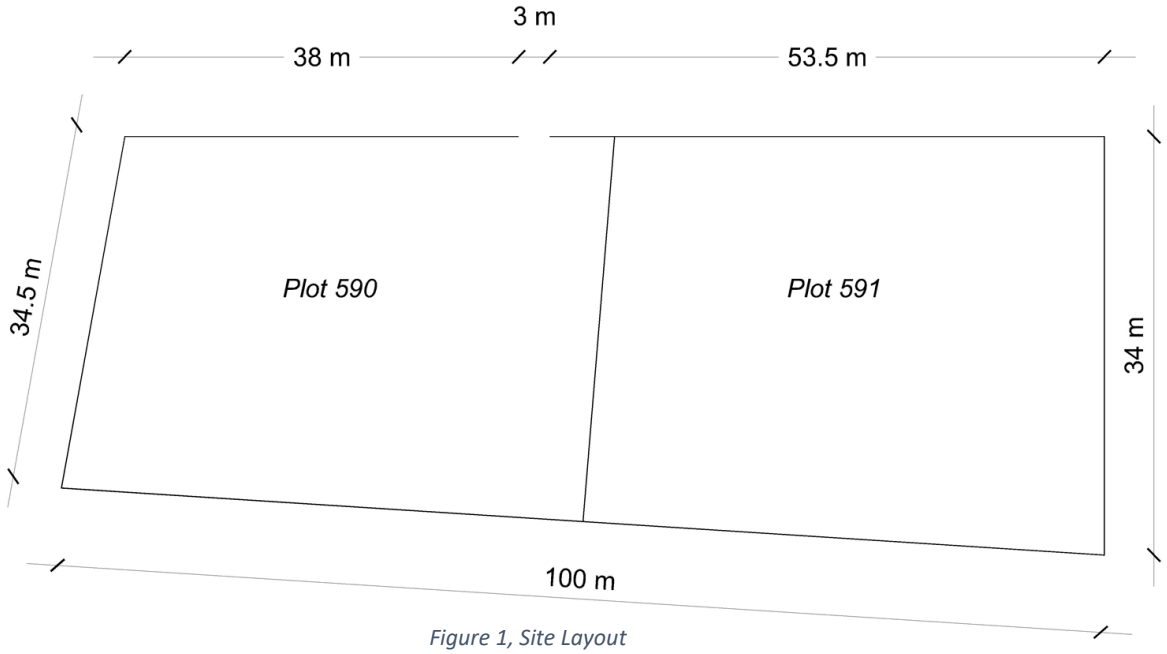

Figure 1, Site Layout

Site Identification

Figure 2, Satellite Photo

Photographic documentation

Figure 3, External Wall, North East View

Figure 4, Cemetery Entrance, North

Figure 5, Cemetery's Yard

Figure 6, External Wall, North West View

Technical Description

The cemetery is located outside the village centre, close to the main road. The cemetery is fenced by rubble-stone perimeter walls, rendered on both sides and finish with a capping mortar. Several burials are located in the cemetery yard.

Work Description

1.0 General cleaning, pruning of trees and vegetation removal
2.0 Repairs on the perimeter walls
3.0 Fixing and paint all metal members of the cemetery

Specifications for the Works

1.0 General cleaning, pruning of trees and vegetation removal

1.1 Documentation of current state

1.1.1 The contractor is expected to record the site conditions as written descriptions and provide an existing layout with details as measured drawing (plan) by an architect where all burials will be marked (approximate location & size). In the drawing also vegetation should be marked (approximate location and size and type). The drawing should include also notes on the construction and condition of the perimeter wall. If needed the plan might be accompanied by photos and sketches. The contractor shall provide the documentation within 5 days after site possession. The documentation will be approved by the UNDP Engineer.

1.1.2 The current state of the cemetery before the works should be also documented and submitted photographically. The documentation will be approved by the UNDP Engineer.

1.2 Documentation of final state and inventories

1.2.1 The contractor is expected to provide the documentation of final state of the cemetery photographically after all works. The documentation will be approved by the UNDP Engineer.

1.2.2 During the works, new items can be revealed and these must be reported to the UNDP Engineer immediately. Those items must be documented by the archaeologist of contractor and maintained under the supervision of archaeologist. The archaeologist will be referred to as the "Archaeologist of contractor".

1.3 Dealing with the burials on site

1.3.1 All gravestones and other burial objects should remain as they are, even if displaced. No burial object should be moved or removed from the site.

1.3.2 The contractor should not enter the site with heavy machinery, to prevent damage the burials.

1.3.3 The contractor and contractor's crew must have understood that the tombs, tombstones, and historic markers are very fragile and that, works in historic cemeteries must be conducted with utmost care as not to damage in any way the cemetery's elements.

1.4 Pruning

1.4.1 Check cemetery trees for dead branches and other signs of ill health; the contractor should remove any dangerous limbs of trees from neighboring plots also. UNDP

engineer should be informed before acting on trees from neighboring plots.

1.4.2 The contractor should provide to the engineer a method of statement for the pruning for approval, considering that heavy machinery should not enter the site, to prevent any damage to the burials.

1.4.3 If woody plants are growing adjacent to the tombs, they can be cut back to ground level. Any cutting back should be done gradually by removing smaller growth and then larger branches.

1.4.4 Care must be taken to ensure that branches do not fall onto structures or people. All H&S measures should be taken (according to H&S plan and H&S recommendations for the approved pruning method)

1.5 Vegetation removal

1.5.1 The contractor can uproot small trees or shrubs only upon approval from the UNDP Engineer.

1.5.2 Do not attempt to remove all the vegetation right away but, using secateurs and/or pruning saw, remove smaller branches so that the main stems can be revealed.

1.5.3 Clear all debris as it accumulates; arrange for disposal to an appropriate location. Leaving debris allows new seeds to take root.

1.6 Treating weeds

1.6.1 Weed removal should be done manually or using hand tools. In dense areas, a power rake or hand raking can loosen the weeds. Rototilling is not recommended because of the potential for damage to stones, graves, and archaeological remains. Great care should be given in removing the grass from the immediate vicinity of gravestones or tombs.

1.6.2 Chemical herbicides are not recommended for broadcast or spray application. Many contain salts and are often acidic – conditions which can be harmful to marble and limestone.

Note: All debris should be cleared as it accumulates; arrange for disposal to an appropriate location. Leaving debris allows new seeds to take root. UNDP Engineer should be informed about the location for disposal and approval will be obtain before commencing to the work.

2.0 <u>Repairs on the perimeter walls</u>

2.1 Reconstruction of missing Parts of the perimeter wall

2.1.1 Carefully remove the displaced and loose stones of the masonry from the collapsed parts of the walls if this applies and store safely for reuse. Drawing includes geometry and measurements of the wall will be provided by contractor and approved by the Engineer before commencing to the work.

2.1.2 If other stone material from a wall's collapse still exists on site this should be stored safely and reused for the reconstruction of the wall.

2.1.3 Dismantling the wall stones should be down to the top of its base. If necessary, the wall bases will be excavated to expose the base and check repairs. After the dismantling of the wall stones, the inspection will be carried by the engineer for excavation.

2.1.4 The method statement for the excavation works will be provided by the contractor. All H&S measures should be implemented (according to H&S plan and H&S recommendations for the approved excavation method) and the excavation of the area should be done carefully by hand tools. All the excavation works will be under the supervision of the archaeologist. During the works, new items, objects and structure can

be revealed and these must be reported to the UNDP Engineer immediately. Those items must be documented by the archaeologist of contractor and maintained under the supervision of archaeologist. The archaeologist will be referred to as the "Archaeologist of contractor".

2.1.5 If any repairs are required on the rubble base, the method statement will be provided before commencing to the work.

2.1.6 Dry cleaning of the masonry cavity of loose surface deposits on the stone surfaces, dirt, vegetation, loose mortar, and loose debris to be performed using soft flat brushes, natural fibre brooms and vacuum cleaners.

2.1.7 Make sure all loose debris is removed from the masonry cavity and rinse with potable water (PH 7 or higher) to remove dust.

2.1.8 Pre-wet adjacent surfaces with clean, potable water before initiating rebuilding of the masonry.

2.1.9 The masonry should be rebuilt with the same type of stones and mortar and in similar style and workmanship with the existing wall (considering the style and form of any coursing patterns, masonry structure, stone shapes, dimensions etc.). The stone should be laid in an evenly filled bed of mortar, with full mortar coverage on horizontal and vertical joints. Adjust stone units to final position while the mortar is soft and plastic. Repointing with ready-to-use mortar containing natural hydraulic lime base material to match the existing colour. The mortar must match in colour, texture, tooling, and sand content the existing. The objective is to match the historic mortar so that the new material will not conflict visually or physically with the original materials. It must also have less compressive strength than the surrounding stone material. Periodic rewetting of the newly re-pointed area should be conducted as this will also prevent premature drying. Stones are to remain clean of any pointing overspills. Excess mortar must be cleaned before dried. When the mortar is thumbprint hard, use a tool to match the original appearance of joints. Remove excess mortar from the edge of the joint by brushing. Maximum tolerances from plumb and level new work, not to exceed variation from plumb and level of adjacent existing work. Clean the new wall surface with a natural brush after the mortar is dry.

2.1.10 The overall aim is to reuse the existing stone, available for the reconstruction of the masonry. If replacement units are required, they should match original sandstone in colour, texture, and size, and be free from salts and other contaminants.

2.1.11 All new materials must be checked for consistency, colour, absence of salt, ingredients, texture, etc. The contractor should submit material acceptance forms for all materials to be used for the reconstruction (template will be provided by UNDP).

2.1.12 Method statement to be provided for the wall reconstruction.

2.2 Lime Capping on the walls

2.2.1 Lime capping will be applied on the walls wherever necessary.

2.2.2 Dry cleaning of stone surfaces from loose deposits to remove deposits from surfaces before lime capping.

2.2.3 Laying on top of the walls a mixture of hydraulic lime mortar.

2.2.4 The final surface must have a convex curved surface to disperse the rainwater.

2.2.5 The method statement will be provided for the wall capping together with the wall reconstruction.

2.3 Repairs on the existing cement plaster of the front wall

2.3.1 All deteriorated and detached plasters to be removed from the wall surface using soft flat brushes, natural fibre brooms and vacuum cleaners.

2.3.2 Wet wash the area, to be ready to receive the new plaster.

2.3.3 New plastering shall be applied to wall surfaces as follows:

2.3.3.1 "A" layer coating: shall be sprayed with roughcast cement plaster at the ratio of 1:3 (cement and coarse graded crushed sand)

2.3.3.2 "B" layer coating: plaster shall be applied in ratio 1:2 (cement and coarse graded crushed sand)

2.3.3.3 "C" layer coating: shall be applied after the two previous coats are completely dry. Layer "C" shall be well rubbed and repeatedly floated with use of pan floats.

Note: The thickness of the second coating shall be approximately 1/2", while the final coat shall be 1/4" thick. In other words, combined coating thickness for all three layers shall not exceed one inch (1").

2.4 Limewash on the front wall

2.4.1 Limewash will be applied to all external and internal wall surfaces, stone columns and capping stones on the front wall.

2.4.2 Surface preparation: All surfaces must be sound, clean dry and free from dirt, grease, and other contamination. Flaking or peeling may occur if painting over weak paint payers. If mould is present, the surface must be cleaned. Cracking or lose subsurface material must be repaired and filled with mortar and filler. New plaster application must be significantly cured.

2.4.3 Create a test area 1 m² to verify colour and application for approval by the UNDP Engineer.

2.4.4 Spray with water an area of approximately 3 m² at a time until the surface is damp but not running with water. Limewash must be applied to a freshly dampened surface. Limewash should never be applied to a dry surface, as this will cause rapid drying out of the limewash and result in dusting.

2.4.5 Limewash should be applied in several thin coats. Apply with a long-haired or masonry paintbrush.

3.0 <u>Fixing and repainting the metal members of the cemetery</u>

3.1 Fixing the metal gate and metal closure on the main entrance

3.1.1 Manufacture new metal gates and the closure members as per the attached drawing. (Ref: Drawing 1)

3.1.2 All metal parts will be treated with approved undercoat and paint.

3.1.3 The contractor must ensure that the gate is in working condition and a lock should be supplied for the gate.

3.1.4 The contractor should submit a shop drawing for approval before commencing to the manufacturing.

3.2 Manufacturing and fixing in place the missing part of the metal fences near the main entrance and repairing of the existing metal fences

3.2.1 All existing metal fences on the perimeter walls will be examined for any faults or missing parts. All faulty parts or missing parts will be repaired and completed as per the existing detail, size, and materials.

3.2.2 The missing part of the metal fence will be manufactured with the same details, sizes, and dimensions as existing. Welding will be carried out by expert welders and all-metal works and fixing works will be carried out by an expert smith.

3.2.3 All metal parts will be treated with approved undercoat and paint.

3.2.4 The contractor should submit a shop drawing (same type as existing) for approval before commencing to the manufacturing.

3.3 Treat rust and repaint all metal parts.

3.3.1 All rusted metal parts and the metal fence should be treated for rust. Rust should be removed, and the metal surfaces should be treated with an active primer, which contains active corrosion inhibiting additives and finally painted in the same colour as the original. Satisfactory time should be provided to the primer to mature before proceeding with the paint coat.

3.3.2 If corrosion has reduced the cross-section of the steel elements to less than 80% of its original diameter, then they should be cut to the required extent needed and replaced by metal members of equivalent type (material type, profile and shape should be as original). The new metal members should be welded to the existing structure and treated to match the original.

Note: All materials will be approved for quality and colour by the engineer before any works proceed.