SCOPE OF WORK

DATE: April 21, 2015

PROJECT: X1001- Replace underground sewer drainage lines and restore the area

LOCATION: H 1487 Way 2128, MAQ. (House 9 Rd 9)

1. PROJECT DESCRIPTION

   a. Remove all root clogged sewer drainage lines and replace it with 100mm & 150mm UPVC drain pipes. Repair/restore the yard.

3. PROJECT SCHEDULE & WORKERS.

   a. Work days to be coordinated with Facilities Manager (FM)/Contracting Officer’s Representative (COR)
   b. Contractor should submit proposed work schedule and time line for FM’s/ COR’s approval.
   c. Work hours will be from 0800 to 17:00, Sunday through Thursday.

The following points of the project must be approved prior to the contractor proceeding to the next phase.
   a. Approval of material selection.
   b. Site inspection after demolition
   c. Site inspection during each phase of work.

5. QUALITY CONTROL
a. A site supervisor that has a minimal knowledge of English must be present at all times.
b. Site supervisor will ensure the material is not damaged prior to or during installation and that standard industry practices as defined in the International Building Code, are followed at all times.
c. A final inspection will be held with the Embassy and the site supervisor to inspect for quality of the finished works.

6. SAFETY

a. Site supervisor will ensure that all equipment used during the project is in safe operating condition. All personnel on the job site will be given the appropriate safety equipment. The Embassy reserves the right to stop the work if any unsafe conditions are found.
b. All electrical equipment such as drills, grinding, buffing machines and any extension cords must be properly grounded and be free from any defect in the insulation.
c. All ladders/scaffoldings will be in good condition and used in a proper manner.

7. SECURITY

a. A list of all personnel working on the project along with Identification numbers must be submitted to the embassy no later than 5 working days prior to the beginning of actual starting date of the project.

8. Scope of work

General
1. Work area shall be cleaned of all debris at the end of each workday.
2. The contractor shall provide materials & safety equipment and all required tools and equipment to complete the project.
3. The contractor shall provide work schedule showing starting and completion of the project and the date and time planning to work in the residence yard.
4. After hours and weekend work may be required. This will be determined by the Facility Management Officer. Normal working hours shall be 0800 to 1630 hrs.
5. The contractor shall protect all existing surfaces and existing trees and lawns from damage. Protection materials provided by the contractor. Maximum care should be taken while excavation to avoid damages to other underground services. Concrete and paved areas should be restored to its original state & shape after the job is completed. Irrigation system shall be repaired, replaced or added to where necessary. The Contractor will repair or replace at his own cost if anything damaged due to the negligence of the contractor.
6. Only those materials approved by the Facility Management Officer will be used. Contractor must provide samples, at the request of Facility Management Officer.
7. Work should be done causing minimum disturbance to the tenant. When working on main drainage lines, bowser trucks should be used to lift up the sewage water to avoid overflowing the drainage manholes in to the property.
8. The construction of new manholes should be in accordance with the local standards and codes and removable drainage manhole covers should be used. Old redundant manhole should be demolished prior to back filling. Any manholes require repair or smoothening the drain channels shall be done by the contractor. Manholes shall be raised or lowered to meet the new level of interlock pavers.
9. There are few main drainage lines coming from other properties also passing through our property to connect the main sewer line passing through the side of the main road also needs to be replaced. Since the drawings are not available the contractor should make a site survey to understand the routes of drainage lines and for the proper assessment about the project.
10. Any variation in quantity of work shall not be liable for additional payment and the price for the complete project shall be of lump sum.
11. The contractor is required to provide warranty for the workmanship for twelve months from the date of completion of the project.

**Trench Excavation.**

Excavate trench in order to expose the existing underground sewage lines. All excavations should be carried out with extreme care and at most supervision to avoid any possible damages to the existing services or any other materials/components etc. No excavating machines are allowed to use in the property for excavation as it may damage the existing underground services. Adequate side protection is to be given wherever necessary and compulsory to the areas where the depth is more than 1.5 meters to avoid falling of side soil. Care should be taken to avoid piling up the soil and stone above lawn and small bushes. Excess stones and soil should be taken away by the contractor from the property yard as soon as the trenches are backfilled.

**Preparation of Trenches.**

Level the bottom of the trench and make sure no boulders/stones (big size) are left on the trench surface. Provide sand bedding to a minimum thickness of 100mm all over the trench surface in order to receive new 100mm dia & 150 mm dia Upvc pipes. Make sure that all sand bedding is done in proper gradient so as to enable the pipes to get adequate slope while laying them over the sand bedding. Sand bedding to be covered the
entire width of the trench and gravel should be spread over the pipe to a minimum of 100mm above the top of the pipes.

**Laying of pipes**

All drainage pipes used are to comprise to British or American code practice originally used for underground drainage purposes. All full-length pipes are of 6 meters long with socket one end with O ring and other end shall be spigot to BS-4660 or equal standard. Put concrete over the joints to avoid root penetration through joints. Cut length pipes are used only where full-length pipes cannot be accommodated and there should be only one cut piece wherever full-length pipes cannot be used. All joints should be done with double ring sockets/fittings. Pipes should have enough slope to have smooth sewage flow. Drainpipes joining manhole should be sealed around properly to avoid roots penetration.

**Testing:-**
- Conduct a water test for leakage and proper slope on each drain line prior to back filling.

**Cleaning;**
Remove excess soil and stones from the property & clean, restore the complete area and make necessary repairs for the damages if any.

**Basic Scope:** Remove existing exposed/underground drainage lines and replace it with Upvc drainage pipes

- Remove paving tiles.
- Excavate as required.
- Modify/reconstruct manholes as required.
- Prepare excavated trenches.
- Install drainage lines.
- Backfill the trenches.
- Remove excess soil.
- Level and compact the ground.
- Install interlocking paving tiles.