

**FIREFIGHTING PUMPS, JOCKEY PUMPS AND
CONTROLLERS REPLACEMENT
PROJECT AT
HOUSING COMPOUNDS MAADI 11-11 & 55-17**



Description, Specifications,

And

Work Statement

Date: July 15, 2015

1.0 GENERAL REQUIREMENTS

1.1 General

This statement of work covers the work required at US government owned properties.

1.2 Summary of work

Visits to the site to inspect the existing conditions should be arranged in advance with the Facility Manager.

It is the contractor's responsibility to verify the locations of structural, existing fire pumps. Jockey pumps, controllers, measuring devices and shut-off valves of the existing firefighting system. The contractor shall be responsible to modify any structure or electrical or piping to accommodate the new fire pumps replacement and its corresponding controller replacement. The project include the replacement of the Firefighting pump, jockey pump, controller and measuring devices for the firefighting system at Maadi 11-11 and Maadi 55-17 housing compound.

The Project includes procurement, shipping, and delivery of the fire pumps, jockey pump, controller and its corresponding parts and installs all the provided materials to the project location.

1.3 Contractor provided services

All construction and materials shall be in accordance with the U.S., **NFPA 20** codes and local codes and as approved by the COR.

Work shall be governed by the latest edition of the International Building Code (IBC), NFPA 20, and National Electric Code (NEC). Work not in compliance with the IBC, NFPA 20 and NEC 2014 shall be deemed unacceptable. Egyptian code is acceptable provided it is more stringent than the aforementioned codes.

1.4 Submittals

1.4.1 The contractor shall submit as part of his bid, the following:

1. Preliminary construction schedule.
2. Technical data for all used materials.
- 3. Pump manufacture and cost.**
4. Safety plan according to the SAFETY AND HEALTH REQUIREMENTS of the US Army Corps of Engineers-EM 385-1-1 which will be reviewed by the A/POSHO
- 5. Any modifications to existing conditions or current installation if deemed necessary to accomplish new install.**

- 1.4.2 After contract award the contractor shall submit the following;
1. A Construction schedule by working days on each job.
 2. A complete submittal package from fire pump manufacture to include all apertures furnished with pumps from factory. This shall be review by OBO/FIR for approval through Dave Stobaugh as a one on one replacement before works commences.
 3. Any purposed modifications to piping, housekeeping pad modifications and any changes deemed necessary to install new, pertaining to fire pump, fire pump controller, jockey pump and controller.
 4. Names of personnel any other required info required by Post RSO for approval.

1.5 Alteration and coordination

Work under this contract involves the coordination of different activities during the entire project, including the preparation of drawings, diagrams and schedules from commencement to completion (and warranty periods).

Alterations and amendments: where applicable, requirements of contract documents apply to alteration and amendment works in same manner as for the work under this contract.

1.6 Grades, lines and levels

Where new work is to connect to existing work, dimensions and elevations of existing work must be verified. Any discrepancy between drawings and/or specifications and existing conditions shall be referred to the COR for adjustment before work affected has been performed. In the event of the contractor's failure to give such notice, he will be held responsible for results of any discrepancies and costs of rectifying them. The submission of the bid will be conclusive evidence that the bidder has complied with all conditions related to the character, quality and quantity of work requirements to be performed. No claims for additional time or compensation due to variations between existing and conditions encountered during construction will be honored.

1.7 Construction work procedure

1.7.1 Where new work under this project disturbs existing work, the affected surfaces shall be repaired or refinished to match the existing and left in as good condition as existed before the commencement of the work. Materials and workmanship used in such repair work, unless otherwise indicated or specified, shall conform in type, quality and appearance to the original existing construction.

1.7.2 The contractor shall be subject to and shall at all times conform to the Contracting Office Representative's (COR) requirements for the protection of the Complex, plants, equipment, and materials. Welding, burning, and cutting operations in existing areas are prohibited unless otherwise approved in advance by the COR. **If permitted, Post will furnish the needed fire extinguishers.**

1.7.3 Field supervision: At all times, during any performance of the work conducted by the contractor, the contractor shall have English speaking technically qualified representative on site. The COR shall have the right to determine whether the proposed representative has sufficient technical and lingual capabilities, and the contractor shall immediately replace any individual not acceptable to the COR at no change in contract price.

1.7.4 Trash and building materials removed under this contract shall be removed from site on a daily basis. After completion of all work, the contractor shall remove all remaining materials and any equipment that does not belong to the United States Government (USG), leaving the site neat and clean with all functions operating.

1.8 Special project procedures

1.8.1 All work shall be performed from 8:00 a.m. to 4:00 p.m., Sunday through Thursday except for the holidays identified in the holiday schedule attached, which are considered non-working days. Other hours may be approved by the COR with at least 24 hours advance written request.

1.8.2 Storage, loading, unloading, and trash removal shall be inside the premises of the compound and not on the street or outside the property. Violation of this condition and results of this violation will be the complete responsibility of the contractor.

1.8.3 Existing Conditions

1. Before beginning site work, investigate and verify the existence and location of mechanical and electrical systems, underground utilities and other construction affecting the Work.
2. Acceptance of Conditions: Examine substrates, areas, and conditions; verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.
3. The submission of the bid will be conclusive evidence that the bidder has complied with all conditions related to the character, quality and quantity of work requirements to be performed. No claims for additional time or compensation due to variations between existing and conditions encountered during construction will be honored. Failure of the contractor to thoroughly inspect and identify defects, if any, shall not release him from the responsibility to guarantee the whole works (Existing to remain, and new works) for the period specified in the contract terms.

1.8.4 Protection of installed construction

Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.

1.8.5 Correction of the work

1. Repair or remove and replace defective construction. Restore damaged substrates and finishes. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.
2. Restore permanent facilities used during construction to their specified condition.
3. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.
4. Remove and replace chipped, scratched, and broken glass or reflective surfaces.

1.9 Construction Schedule

The contractor shall submit detailed schedule showing each activity along with its duration, predecessors, and successors. A computerized schedule is preferred; however, a scaled bar chart may be acceptable.

1.10 Security Procedures

1.10.1 All of the contractor's personnel shall be subject to all the security procedures required for clearance of personnel working inside U.S. Embassy residential Compounds. These requirements shall include:

1. Submission of valid finger prints, addressed to the US Embassy and copy of the Egyptian ID, two week prior to the required date to access the site.
2. Access for trucks shall be granted on a 48 hours (two working days) advance notice showing: 1) Drivers name 2) Copy of driver's ID 3) Truck description and plate number, and 4) Date and time access required.
3. Access for daily labors can be given for three days, with a 48 hours advance notice showing the name of the persons, ID #, date and place of issue, and a copy of the ID. Labors for three days access will be given that for one time only.
4. All contractor personnel shall be subject to a daily check (in and out) by the government guard personnel.

1.10.2 Failure of the contractor to fulfill any security requirement in a timely manner shall not be constructed as a base for any time and money extension.

Delay or suspension of work due to the US government security regulations or requirements shall not be a base for claims.

1.11 Safety regulations

1.11.1 All of the contractor personal shall be subject to comply with the safety procedures implemented by the SAFETY AND HEALTH REQUIREMENTS of the US Army Corps of Engineers - EM 385-1-1

Please check the link below

:

<http://www.usace.army.mil/SafetyandOccupationalHealth/SafetyandHealthRequirementsManual.aspx>

And

http://www.publications.usace.army.mil/Portals/76/Publications/EngineerManuals/EM_38_5-1-1_2008Sep_Consolidated_2011Aug.pdf

2.0 MATERIALS PRODUCTS

2.1 FIRE PUMP

Horizontally Mounted, Split-Case Fire Pumps:

- 1 Standard: [**UL 448**] and FM Approved.
- 2 Casing: Axially split case, cast iron.
- 3 Impeller: Cast bronze.
- 4 Wear Rings: Replaceable bronze.
- 5 Shaft and Sleeve: Steel shaft with bronze sleeve.
- 6 Shaft Bearings: Grease-lubricated **outer bearings, water cooled inner bearings**
- 7 Seals: Stuffing box.
- 8 Mounting: Pump and driver on same base, with horizontal shafts.
- 9 Coupling: Flexible, with metal guard.
- 10 Inlet Flange: [**Class 125**].
- 11 Outlet Flange: [**Class 125**].
- 12 Capacity: 1000 GPM at 125 PSI.
- 13 Rating: 125 HP.
- 14 Volts: [380].
- 15 Phase: Three.
- 16 Hertz: 50.
- 17 RPM: 2950
- 18 **Manufacturer: Fairbanks or Equal**

2.2 JOCKEY PUMP

- 1 Capacity: 25 GPM at 140 PSI.
- 2 Rating: 3 HP.
- 3 Volts: [380].

- 4 Phase: Three.
- 5 Hertz: 50.
- 6 RPM: 2880
- 7 **Manufacturer: Fairbanks or Equal**

2.3 **FIRE PUMP CONTROLLER**

A) Firefighting Pump Full-Service Controllers:

- 1. General Requirements for Full-Service Controllers: [Combined automatic and nonautomatic] operation; factory assembled, wired, and tested; continuous-duty rated.
- 2. Method of Starting: [Pressure] -switch activated.
 - 1 Magnetic Controller: [Wye-delta (open transition)] type.
 - 2 Solid-State Controller: [Reduced-voltage] <Insert type> type.
 - 3 Emergency Start: Mechanically operated start handle.
- 3. Method of Stopping: [Automatic and nonautomatic shutdown after automatic starting]
- 4. Door-Mounted Operator Interface and Controls:
Local alarm and status indications.
- 5. Additional Features:
 - 1 Extra output contacts.
 - 2 Local alarm bell.
 - 3 Door-mounted status logs.
 - 4 Operator Interface: USB, Ethernet, and RS485.
 - 5 Enclosure: NEMA 2.
 - 6 **Run Timer**
 - 7 **USB port for data downloads.**

B) **JOCKEY PUMP CONTROLLER**

- 1. Features:
 - 1 Controller: 3 HP, 380V, 50Hz, Enclosure: NEMA 2.
 - 2 Type: Factory assembled, -wired, and tested, across-the-line; for combined automatic and manual operation.
 - 3 Enclosure: Wall-mounted.
 - 4 Fusible disconnect switch.
 - 5 Pressure switch.
 - 6 Hand-off-auto selector switch.

- 7 Pilot light.
- 8 Running period timer. - - - If run timer is standard item it is to be disabled for Jockey pump. Jockey pump shall only operate upon pressure setting by means of switch FOR CUT IN AND CUT OUT PRESSURE SETTINGS.

C) MANUFACTURER:

Firetrol or equal

3.0 EXECUTION

1.1 EXAMINATION

1. Examine equipment bases and anchorage provisions, with Installer present, for compliance with requirements and for conditions affecting performance of fire pumps.
2. Examine roughing-in for fire-suppression piping systems to verify actual locations of piping connections before fire-pump installation.
3. Proceed with installation only after unsatisfactory conditions have been corrected.

1.2 INSTALLATION

1. Fire-Pump Installation Standard: Comply with NFPA 20 for installation of fire pumps, relief valves, and related components.
2. Equipment Mounting:
 - 1 Install fire pumps on the same concrete base as location but perform all modification required to allocate the new fire pump as needed.
 - 2 In case extension of the concrete base is required, the contractor shall perform the addition as part of his scope of work at no extra cost to the government.
3. Install fire-pump suction and discharge piping equal to or larger than sizes required by NFPA 20.
4. Support piping and pumps separately so weight of piping does not rest on pumps.
5. Replace existing pressure gages on fire-pump suction and discharge flange pressure-gage tapings. All new gauges and to be liquid filled Glycerin. – 3-1/2” x 1/4”thread. Suction gauge 30-/300# on suction side and 0+/300# discharge side of fire pump. Ashcroft of equal. They are to be installed by means of a pet cock or valve to be able to replace without taking pump

out of service. New gauges are to be installing via furnished outlets provided from the factory on suction and discharge flanges.

6. Install piping hangers and supports, anchors, valves, gages, and equipment supports according to NFPA 20.
7. Electrical Wiring: Install electrical devices furnished by equipment manufacturers but not factory mounted.
8. ALL new wiring or EXISTING wiring shall be installed through the bottom of the controllers per manufactures requirements. Side or top taps voids manufacture warranties. All wiring and connectors shall be water tight and water proofed. No FACP devices shall be mounted onto any new controllers. Existing FACP wire are too installed to proper contacts per manufacture recommendations in main fire pump controller.
9. New air casing valve shall be piped to floor drain or into drip gland drains – but not stuck down into drip gland bowls on either outer bearings. This automatic air release is not to be plugged off. It shall also incorporate a manual ¼” vent in case of failure of automatic vent.
10. Inner bearings will require proper cooling via pump gland packing. The packing’s on NON – CHURN, are to drip One drip per second pertain to both drip glands. During churn they are to drain at a moderate flow to keep inner bearing cool during operation. At no time are the packing to be slammed tight. Grease outer bearings but take caution not to over grease them due to they will overheat if too much is applied. Reinstall plastic factory provide caps on grease fittings.
11. Main fire pumps are to incorporate a ¾” relief valve or Kunkle type valve set to open at 5 Psi below set factory churn pressure to open, to ensure the inner bearings are provided proper cooling while pump is churning/running. It is to be pipe to an open floor drain so it can be monitored and adjusted. This valve shall be installed via discharge flange lower body and before the discharge check valve. Not be installed on system side of check valve off discharge side of fire pump.
12. Engage a factory-authorized service representative to perform startup service.

Complete installation and startup checks according to manufacturer's written instructions.

1.3 ALIGNMENT

1. Align split-case pump and driver shafts after complete unit has been leveled on concrete base, grout has set, and anchor bolts have been tightened. All anchor bolts are to be no less than 5/8” and anchor on all four corners.

2. After alignment is correct, tighten anchor bolts evenly. Fill baseplate completely with grout, with metal blocks and shims or wedges in place. Tighten anchor bolts after grout has hardened. Check alignment and make required corrections.

Note: If installed back on existing housekeeping pad and new pump is on a common flat steel base plate grouting, is not required. If pump is on "I" beams it is required to be grouted with light weight concrete.

3. Align piping connections.
4. Align pump and driver shafts for angular and parallel alignment according to HI 1.4 and to tolerances specified by manufacturer.
5. If a fault coupling is furnished from the factory to connect the electric motor to pump it is to be greased with the proper LTG (Long Term Grease) from the manufacturer. It does not come from the factory with grease. (If this applies to this manufacturer).

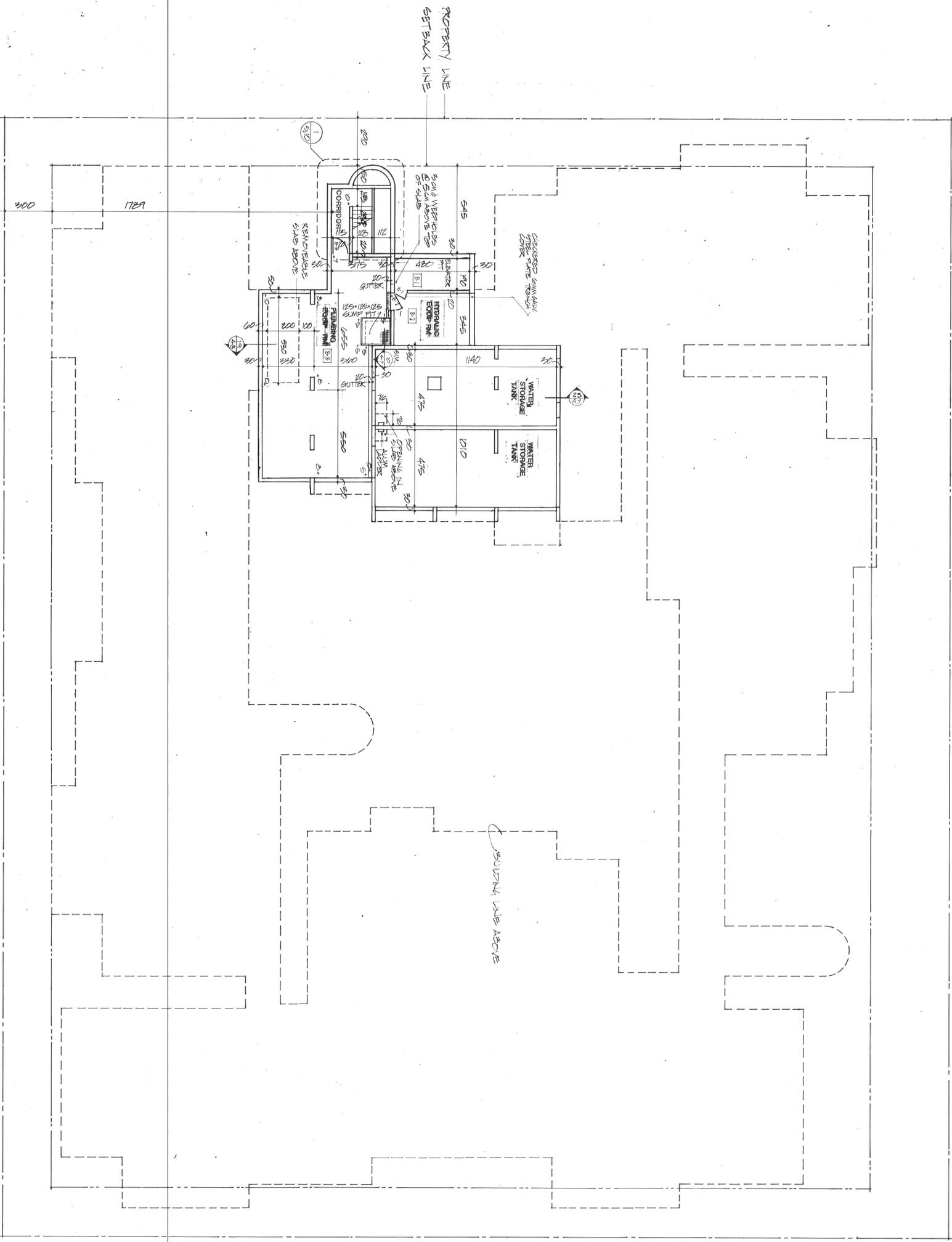
1.4 CONNECTIONS

1. Install piping adjacent to pumps and equipment to allow service and maintenance.
2. Connect relief-valve discharge to drainage piping or point of discharge.
3. Connect fire pumps to their controllers.

1.5 FIELD QUALITY CONTROL

1. Test each fire pump with its controller as a unit. Comply with requirements for electric-motor-driver fire-pump controllers specified in Section 213900 "Controllers for Fire-Pump Drivers."
2. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect, test, and adjust components, assemblies, and equipment installations, including connections.
3. Perform tests and inspections.
 - 1 Manufacturer's Field Service: Engage a factory-authorized service representative to inspect components, assemblies, and equipment installations, including connections, and to assist in testing.
4. Tests and Inspections:
 - 1 After installing components, assemblies, and equipment including controller, test for compliance with requirements.
 - 2 **Test according to NFPA 20 for acceptance and performance testing. Perform controller manufacture test.**

- 3 Leak Test: After installation, charge system and test for leaks. Repair leaks and retest until no leaks exist.
- 4 Operational Test: After electrical circuitry has been energized, start units to confirm proper motor rotation and unit operation.
- 5 Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- 6 New pump is not required to be hydro test @ 200 psi
- 7 Factory test is to be done by factory before shipped and will not be witnessed by FIR, in the factory.
- 8 Field test is and will be required to be witnessed by OBO/FIR for final acceptance. The installer and factory rep shall be on job site when testing occurs and perform all required test.
- 9 Components, assemblies, and equipment will be considered defective if they do not pass tests and inspections
- 10 Prepare test and inspection reports per NFPA 20
- 11 Furnish fire hoses in number, size, and length required to reach storm drain or other acceptable location to dispose of fire-pump test water. Hoses are for tests only and do not convey to Owner.
- 12 Provide manufacture manuals
- 13 Provide manufacture written warranties and installation warranty.
- 14 Provide training to local staff on proper maintenance and operation of all new untis pertaining to the SOW

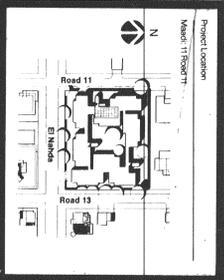


NOTE NO. 1
Work included in previous contract and shown on this drawing and therefore not in this contract is as follows:

1. Concrete columns, slabs, etc.
2. Concrete stairs
3. Ladders
4. Waterproofing below grade

NOTE NO. 2
Work shown on this drawing that is in this contract includes the following:

1. Gratings of sump pit
2. Doors & partitions
3. Masonry walls



No.	Date	Description
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2		1.24.18 WORKING DRAWINGS
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Owner: OFFICE OF FOREIGN BUILDINGS
U.S. DEPARTMENT OF STATE
Washington, D.C. 20520

Architect: HILL LAMITY O'NEAL & ASSOCIATES, P.C.
1270 Avenue of the Americas, New York, New York 10020
Telephone: (212) 267-7100

Construction Manager: CM INC.
2700 South Post Oak Road, Houston, Texas 77066
Telephone: (713) 623-5000

Consulting Engineer: STEVA J. HENNESSY, INC.
10 West 50th Street, New York, New York 10020
Telephone: (212) 489-9200

Structural Engineer: JACO G. GILLUM & ASSOCIATES
270 Avenue of the Americas, New York, New York 10020
Telephone: (212) 247-6153

Specialty Engineering: H.C. ASSOCIATES
100 North Broadway, St. Louis, Missouri 63102
Telephone: (314) 421-2000

AS BUILT

15 6270884 1411

101 hok

U.S. EMBASSY
STAFF HOUSING

AS BUILT

15 6270884 1411

Drawn by: T.B.M. Checked by: J.W.
Project No: 0206-021 Date: 12.17.18

BASEMENT FLOOR
PLAN

Scale: 1/8" = 1'-0"

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