

# ATCT WINDOW WETTING SYSTEM

JAN ATCT Facility

Project Location: Lat/Long 32.3100, -90.0755

Jackson-Medgar Wiley Evers International Airport

Jackson, MS 39208

## 1. STATEMENT OF WORK

The requirements in this document support the removal and installation of an Air Traffic Control Tower (ATCT) Cab Window Wetting System at the Air Traffic Control Tower (ATCT) at the Jackson-Medgar Wiley Evers International (JAN) airport. This design has its basis from a design a previous installation at the Nashville, TN ATCT. Please disregard all references on the drawing referencing BNA or Nashville International Airport. Additionally, specific references to electrical panel boards may differ at this location. Coordinate with local FAA representative to locate the breakers for this specific project. The work location access requires escort by FAA escort.

There are times of the year when the ATCT Cab windows develop heavy condensation due to temperature differences between the outside and the inside of the cab glass, rendering it difficult to see and control Air Traffic. The intent of this project is to remove parts of the existing wetting system, and install a new wetting system that will spray water on the exterior of the windows to clear the condensation. The project will include new permanent system piped directly into water supply line with new pumps, replaced copper piping with insulation on the outside of the facility roof, new sprinkler heads, new solenoid valves, a chemical feed tank, a pressure tank and a master control panel. The system shall be zoned to allow the operator to clear individual windows as well as multiple windows at the same time. The system shall drain after use to minimize the risk of standing water in the pipes, and reduce the risk of freezing.

**Access to the facility shall be by escort only. The contractor shall be required to obtain Jackson Municipal Airport Badging to drive onto the secured airport to access the facility. The successful Contractor shall coordinate that with the JMAA Badging office. (<https://jmaa.com/badging>) This will require fingerprinting, etc. After award, contractor may call (601-939-5631) in the Badging Office to get all the information regarding fingerprinting, training, and badging.**

The contractor shall furnish necessary equipment, materials, labor and supervision to perform the following work at the JAN ATCT FAA.

1. All piping inside the building may be reused if sized in accordance with this Statement of Work (SOW). Components of the installation shall be replaced with the proper installation of fittings or unions. (See Figures 1, 5,6, 10-13)
2. Remove existing booster pump. (See Figure 1)
3. Provide and install new booster pump (Designated WWBP-1). The booster pump shall be Franklin Electric (Model #30FMH1S3) or equivalent. The pump capacity shall have a minimum 30 GPM with a discharge pressure of 40 PSIG. 1 hp, Single Phase, 208V AC (See Figure 2)
4. Remove Existing Water Tank. (See Figure 1)
5. Provide and install new water tank (Designated T-2). The diaphragm tank shall be (Well X-Trol MX255 or equal). Tank shall have pre-charged diaphragm type vertically mounted with 81 gallon capacity, 22 gallon draw down at 40-60 psi, factory pre-charged to 40. Mounted to floor.
6. Provide and install new chemical feed system (Surfactant tank-Designated T-3). The chemical tank shall be Pulsafeeder model 40365 (35 gal) with Pulsatron LC04 chemical feed pump (130 W, 115 V, single phase, Max 80 psi) mounted inline. (See Figure 2)

7. Provide and install a 1 drum chemical spill containment platform to set Surfactant Drum upon. Ultratech Ultra-Spill Pallet P1 Plus - 9607 - 1 Drum - With Drain or Equal (1 drum, 50 gal capacity min.) (Figure 2)
8. Provide Dow Ecosurf SA-7, an eco-friendly surfactant, or equivalent. **(This is a long lead item. Order immediately!)** Fill Surfactant Tank.
9. Remove all existing sprinkler heads on Catwalk (See Figures 3, 4).
10. Provide and install new sprinkler heads. The sprinkler heads shall be Rain Bird 25PJDA-C or equivalent. Sprinkler heads should be capable of covering a 25 foot radius at 40 PSI with a 3.8 GPM discharge rate.
11. Remove existing solenoids in the system on the Junction Level and Catwalk of the facility. (See Figures 4, 5, 15, 16)
12. Provide and install ASCO # 8210G004 or equivalent solenoid valves on the system where indicated on the drawings. (24VAC) (All normally closed (N/C)).
13. Remove all existing exterior copper piping. (See Figures 3, 4, 14-16)
14. Provide and install new 1" copper piping and associated fittings for the new window wetting system from the mechanical room to around the exterior of the ATCT cab. Exterior Piping shall be mounted to existing Unistrut to each sprinkler head station. (All Copper piping shall be 1" Hard Drawn Type L Copper, with non-lead solder. (ASTM B88)) ProPress fittings may be submitted if applicable in lieu of soldered joints.
15. Remove Existing Control Panel located in control tower cab. (See Figure 6)
16. Provide and install a new cab defogger control panel for the new window wetting system as outlined on drawing BNA-D-ATCT-E012. Final location of control panel shall be coordinated with the FAA onsite representative. (See Figure 7)
17. Provide and install a new 30A, 1pole, non-fused, NEMA 1 disconnect switch to operate each pump.
18. Provide and install 1" thick Armaflex closed cell insulation over all exterior copper pipes, and cover with aluminum jacketing with appropriate fittings. Interior pipes do not require the aluminum jacketing. Mount all piping using existing Unistrut and new stainless pipe holders.
19. All electrical work shall comply with National Electric Code, and FAA Std. 19E. All interior electrical conduits above 4' may be electric metallic tubing (EMT) with compression fittings. Below 4' and all exterior shall be Rigid Galvanized Steel (RGS) with threaded fittings. Liquidtight metal flex with compression fittings shall be used for control wiring on catwalk and to any vibrating equipment in lengths not to exceed 6'. Exterior junction boxes NEMA 4 raintight or equivalent May be reused (See Figs 14, 16 Typical). The contractor shall coordinate all terminations within power panels with the FAA.
20. Current carrying conductors for power shall be #12THWN, solid wire, Color Coded Black, Red, Blue for phases ABC respectively. Control wires may be stranded.
21. All hardware shall be stainless steel. (Figs. 14, 15, 16 Typical)
22. Existing ceiling penetration shall be used. All penetrations shall be sealed watertight. If any conduit or piping passes through an existing fire rated wall or ceiling/floor, it shall be firestopped by a licensed firestopping contractor. Roof penetration 'pitch pockets' shall be treated and sealed using PM Silicone PATCH AND REPAIR SEALANT FG-401-2 (White). (See Figure 14, Typical)
23. Cut away old spray foam and finish/seal all roof penetrations with FG-401-2. (See Figs. 14, 15, 16)
24. Contractor shall provide and install a 6"x6" white with black letters plastic laminated plate with the sequence of operation. (See verbiage in this SOW)

25. Contractor shall test the system to ensure proper function prior to turning over the system to the FAA. The contractor shall provide training to personnel on the operation and a separate training to maintenance personnel on the maintenance of the system.

The General Contractor (GC) shall be expected to work Monday through Friday during the day time hours of 0700 AM to 0330 PM unless alternatively coordinated in advance with the FAA onsite representative. Coordination between the GC and FAA personnel shall be required at all times in order to maintain an operational facility.

## **2. SITE ACCESS/CONSTRUCTION LIMITS**

1. Contractor shall maintain access to the site at all times.
2. Construction/demolition shall in no way interfere with FAA Operations. Extreme care shall be exercised so as not to cause any interference or interruption of service provided by this facility. It is mandatory that the contractor protect FAA personnel and existing communications equipment. Any damages incurred, as a result of construction activity during the performance of this contract will be repaired/replaced immediately by the contractor at no cost to the FAA.
3. Any work or activity that may impact the FAA, such as work on critical equipment or circuits, will require coordination with the COR. The COR will coordinate with the local facility personnel to address develop an activity specific "Risk Assessment" for the facility's final approval. This process may take a full day to complete.
4. No contractor personnel may terminate or remove any connections to existing power panels. Only FAA personnel shall enter FAA panel boards unless they have been de-energized and coordination has been done in advance with the COR. Contractor shall advise the COR at least one day in advance when it is expected that access to power panels will be necessary to allow for coordination with local FAA specialists to be on site to make the terminations. The contractor personnel shall not operate any breakers in any existing FAA panel boards. NO ELECTRICAL TERMINATIONS SHALL BE MADE ON AN ENERGIZED CIRCUIT.
5. The contractor shall confine operations, activities, storage of materials and employee parking within the designated areas, as identified by the COR. If required, Additional space the contractor deems necessary shall be obtained off site, at no additional cost to the Government.
6. Vehicles transporting materials shall not be loaded beyond the capacity prescribed by federal, state, or local laws. Obstruction of existing roadways, driveways, to the facility is strictly prohibited.
7. Damage to existing paving, lawns, and utilities caused by the contractor's activities shall be repaired immediately. Any damages that are a result of the contractor's activities shall be repaired. All costs of repairs shall be paid by the contractor. After notice to proceed and prior to the commencement of construction, the contractor and COR shall conduct joint inspections of the existing areas affected by the construction. Existing damage or defects shall be noted and will be used as the basis for determination of damages caused by the contractor's operations.
8. It is strongly urged that the contractor carefully examine the premises to determine the extent of work and the conditions under which it must be done.
9. The Government reserves the right to enter the construction area at any time for work inspection and for the operation of the facility.
10. All work hours, shifts, and overtime work shall be coordinated with the COR. Before commencing construction, furnish to the COR a statement of hours per day and days per

week to normally be worked and approximate number of persons on the job for a normal work shift.

11. At the end of each work day, the contractor shall secure all construction areas. The contractor is responsible for the security of the staging area, and shall provide the required measures at no additional expense to the government.

### **3. PERSONNEL**

**Contracting Officer** -The term "Contracting Officer" (CO) as used herein denotes the person designated to act on behalf of the Government in the performance of this contract. Where reference is made to "Federal Aviation Administration" (FAA), "Contracting Officer's Representative" (COR), or the like, this shall mean the Contracting Officer or his/her authorized representative.

**Contractor Superintendence** - In accordance with Contract Clause entitled SUPERINTENDENCE BY THE CONTRACTOR, the Contractor shall at all times during performance of this contract and until the work is completed and accepted, directly superintend the work or assign and have on site a competent superintendent with the authority to act for the Contractor.

The contractor and his employees shall be subject to all rules and regulations relative to entering and leaving the FAA facility.

**Employees** - The government reserves the right to restrict the employment of any contractor employee, or prospective contractor employee, who is identified as a potential threat to the health, safety, security, general well-being, or operational mission of the installation and its population.

The contractor shall not employ any person who is in employment of the United States Government if the employment of that person would create a conflict of interest.

### **4. COORDINATION**

The contractor shall coordinate all work which has any or may have any impact on any operational system through the COR. The contractor shall immediately cease any work which is adversely impacting the operation of the FAA facility and shall be responsible for the immediate repair or restoration of any portion of the operational system that has been damaged or suffered diminished performance as a result of the contractor's activities. No repairs shall be completed without notification of the COR. In some cases, the repairs may be performed by FAA personnel at the contractor's expense, due to the criticality of the repair.

The Contractor will be responsible for obtaining and payment of all building fees, inspection fees, utility connection charges and any other fees or charges which may be incurred in the performance of this contract. The contractor shall comply with all local city, county, and state construction codes.

All materials or workmanship or both which have been rejected by the COR by reasons of failure to conform with the requirements of the Contract Documents shall be removed and replaced with new, acceptable materials by the contractor at the contractor's own expense. Contractor shall also pay for testing of new materials which have been installed in place of rejected materials.

### **5. CONSTRUCTION SCHEDULE**

The work plan and schedule prepared by the contractor shall consist of a logical narrative plan. Include construction activities, submittal and approval of materials, samples and shop drawings (if applicable), the procurement of critical materials and equipment, fabrication of

special materials and equipment along with their installation and testing.

Within fifteen (15) calendar days of contract award, the contractor shall submit the schedule and work plan. **A Notice to Proceed will not be issued until the schedule is approved.**

The Contractor shall warranty material, workmanship, and equipment furnished by the various manufacturers in writing for a period of **two (2) years** (or not less than the industry standard for the material specified, nor the manufacturer's standard warranty period, whichever is greater) from the date of final project acceptance by the FAA.

## **6. SAFETY REQUIREMENTS**

### **Contractor Responsibility**

1. General Safety Provisions - The Contractor shall bear full responsibility to provide safe working conditions for its employees and Contractors. The Contractor shall not permit any employee or Subcontractor to work in surroundings or under working conditions that are unsanitary, hazardous, or dangerous to the health and safety of the employee.
2. Accident Prevention - The Contractor shall bear the responsibility of maintaining an accident prevention program such that frequent and regular inspections of the job site, materials and equipment are made by a competent person designated by the employer.
3. Use of Equipment - The Contractor shall not permit the use of any machinery, tool, material, or equipment that is not in compliance with OSHA regulations. The employer shall permit only those employees qualified by training and/or experience to operate equipment and machinery.

(a) Submittals required include, but are not necessarily limited to, the following:

1. Contractor Safety Plan
  - a. The FAA shall not be held responsible for safety inspections to ensure Contractor conformance with the OSHA safety regulations. The FAA, however, reserves the right to notify the Contractor of any deficiencies regarding worker safety.
  - b. The FAA will evaluate the Contractor on its safety performance, including that of its Subcontractors. The number and severity of safety and security violations will be considered in this evaluation. Contractor safety violations are cause for termination for default, may result in notification of the Contractor's bonding company, and will affect the Contractor's opportunity to propose on future work. Failure to correct such deficiencies may impact the Contractor's ability to work on future FAA contracts.

### **OSHA Standards**

The Contractor shall comply with the latest Occupational Safety and Health Administration standards (CFR 29 Part 1926) regarding safety in the work area.

The Contractor shall be responsible for obtaining copies of non-FAA referenced documents without additional cost to the FAA. If Contractor requests a copy of FAA directives, they may be obtained by contacting the Contracting Officer.

The Contractor is not relieved from adhering to other OSHA requirements not listed herein. The Contractor shall consult the latest referenced OSHA documents for safety regulations.

Documents:

**OSHA Documents:**

CFR 29 Part 1926 Safety and Health Regulations for Construction

CFR 29 Part 1910 General Industry Standards Applicable to  
Construction Industry

**FAA Documents:**

FAA Order 3900.49 Control of Hazardous Energy During Maintenance,  
Servicing and Repair

## **5. SECURITY**

At the end of each work day, the contractor shall secure all construction areas by closing and locking all doors and gates. The contractor is responsible for the security of the staging area, and shall provide the required measures at no additional expense to the government.

## **6. PERSONNEL**

**Contracting Officer** -The term "Contracting Officer" (CO) as used herein denotes the person designated to act on behalf of the Government in the performance of this contract. Where reference is made to "Federal Aviation Administration" (FAA), "Resident Engineer" (RE), "Contracting Officer's Representative" (COR), or the like, this shall mean the Contracting Officer or his/her authorized representative.

**Contractor Superintendence** - In accordance with Contract Clause entitled SUPERINTENDENCE BY THE CONTRACTOR, the Contractor shall at all times during performance of this contract and until the work is completed and accepted, directly superintend the work or assign and have on site a competent superintendent with the authority to act for the Contractor.

The Contractor shall submit a Project Organizational Chart with the key personnel identified and their qualifications for the Government's review and approval.

The contractor and his employees shall be subject to all rules and regulations relative to entering and leaving the FAA facility.

## **7. CLEAN-UP**

The contractor shall correct or repair any damage done during any part of this contract. Scrap and debris resulting from the project shall be removed from the site after each day's work on site. All debris and generated waste shall require disposal in a manner that is not in conflict with local sanitary regulations.

## **8. SUPPLIES AND EQUIPMENT**

The Contractor shall furnish all supplies and equipment as specified to accomplish the contract specifications.

SHIPPING AND RECEIVING MATERIAL. FAA shall not be responsible for shipping or receiving any material relating to this contract nor shall the contractor ship or otherwise

receive any materials at the expense of the FAA.

PROTECTION OF MATERIAL. Contractor shall protect and maintain in like new condition all materials and supplies to be incorporated into this project and shall be responsible for their safe storage.

STORAGE OF MATERIALS. No storage area/space will be provided for contractor furnished equipment or supplies. Onsite storage must be coordinated with the COR so that the roadway is not blocked.

## **9. CONTACT/LOCATION INFORMATION**

A. Location of Work:

JAN ATCT Facility  
Project Location: Lat/Long 32.3100, -90.0755  
Jackson-Medgar Wiley Evers International Airport  
Jackson, MS 39208

B. FAA Point of Contact:

Ron Nelson  
901-482-7667

C. Pre-Bid Site Visit: All interested contractors are invited to view the site conditions prior to bidding. A site visit can be coordinated with the FAA Point of Contact. All expenses for the recommended site visit shall be the responsibility of the contractor. The U.S. Government shall not reimburse any expenses incurred for the purpose of soliciting bids for this contract.

## **10. ACCEPTANCE OF WORK**

The FAA COTR will conduct a Construction Acceptance Inspection at the completion of the project to ensure that all items of the contract have been fulfilled and that the site has been cleaned of debris.

## **11. PHOTOS AND DRAWINGS (see below)**

### **Drawings included**

JAN-D-ATCT-P003

JAN-D-ATCT-P004

S0-D-102979-P04

S0-D-102979-P05 (Existing Conditions – Remove)

JAN-D-ATCT-E012

## **Sequence of Operation**

Turn the system knob clockwise to a selected time interval (up to 5 minutes). This opens the main valve.

Select a window for defogging, and press and hold that switch to activate the spray nozzle. When the wetting is complete, another window may be selected. For proper operation, only one window at a time should be defogged.

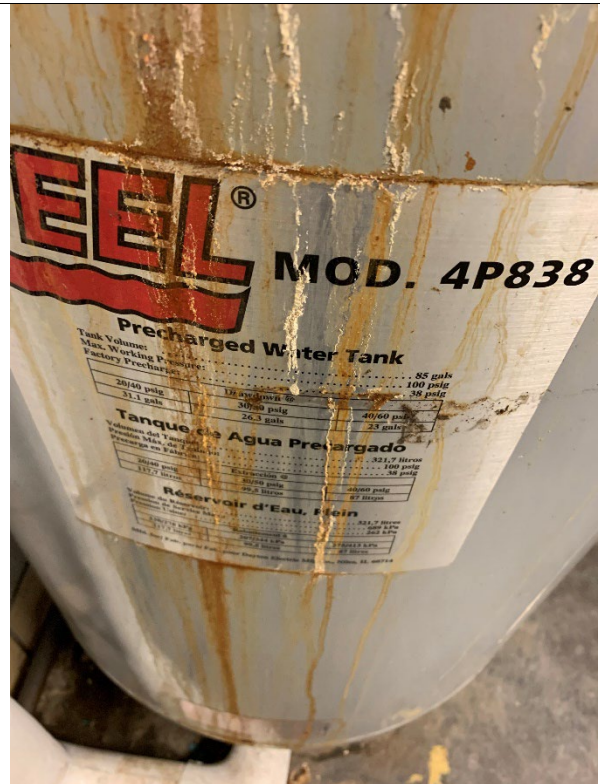
A freeze protection control, (set for 35 degrees) is built into the system will automatically open all valves on the catwalk, and the main drain valve, and drain all water from the piping. The system may also be manually drained by placing the system timer in the 'OFF' position, and holding the DRAIN button for one minute.

Please do not operate the drain unless the timer is in the 'OFF' position.





Figure 1: Existing Pump and Bladder Tank Assembly to be Removed and Replaced.



Pulsafeeder Pump

WWBP1 – Window  
Wetting Booster Pump

Surfactant Tank

Spill  
Containment

Figure 2: Chemical Storage Tank Setup on Containment (This is from another location) Setup may not be exactly the same.





Figure 3: Typical Sprinkler Head to be Removed and Replaced (Typ. XX Locations)

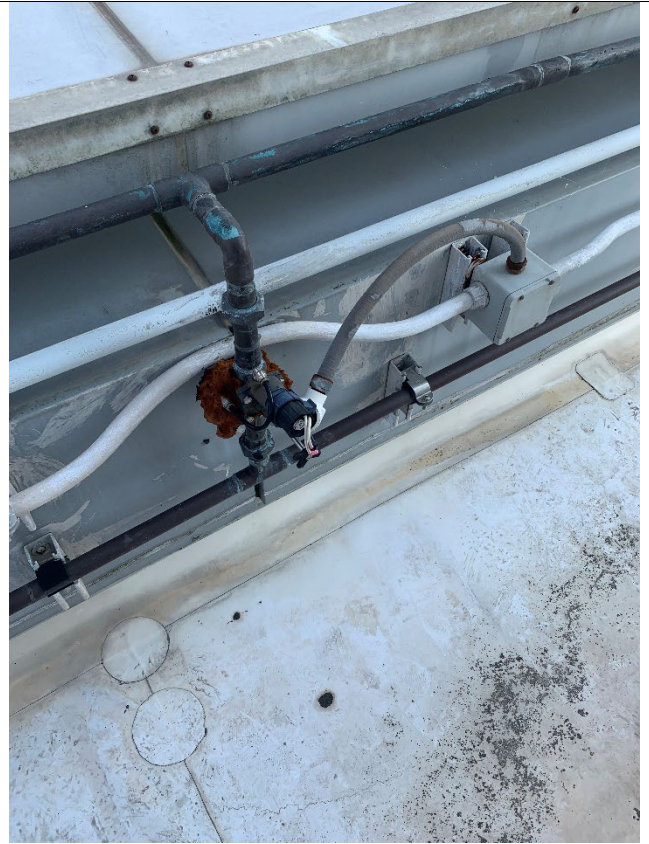


Figure 4: Typical Arrangement of Exterior Copper Piping and Sprinkler Solenoid. T Split in piping is for two heads on one zone. All new Piping shall be insulated and covered with Aluminum Jacket. Electrical Junction boxes may be reused, however all new liquidtight metal flex shall be used.



Figure 5: Typical Solenoid Valves in Window Wetting Pump Area to Be Removed/Replaced.







Figure 6: Existing Control Panel in Tower, to be removed. Coordinate location of new panel.

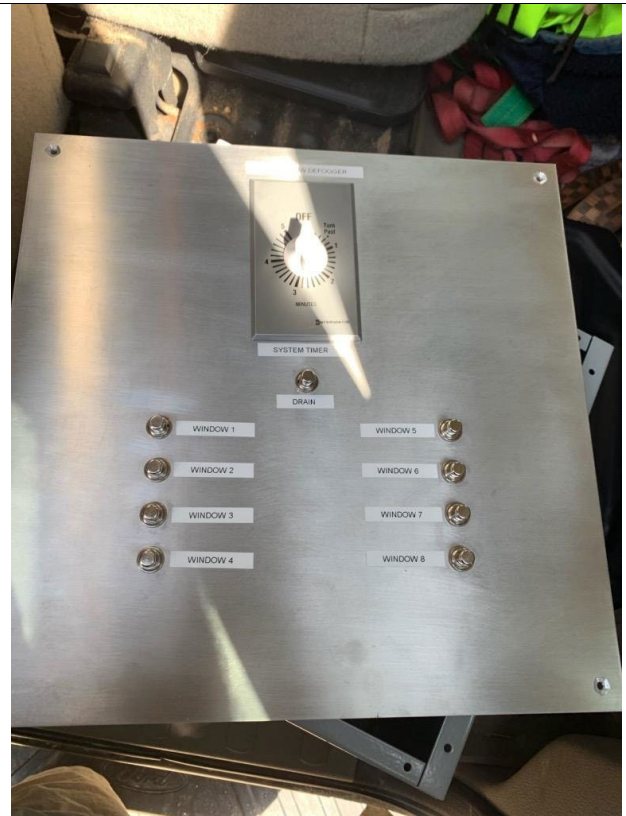


Figure 7: Typical View of new panel (from a different installation)



Figure 8: Starting point for inserting new in place of existing.



Figure 9: Existing Backflow Preventer (To be removed and Replaced)





Figure 10: View of incoming cold water supply and existing water tank (T-2) to be removed/replaced. View of water line overhead crossing room. (To be replaced)



Figure 11: Solenoid Valves to be replaced. Main valve. Drain Valve.



Figure 12: Drain Line (May be reused)





Figure 13: Photo of floor drain.

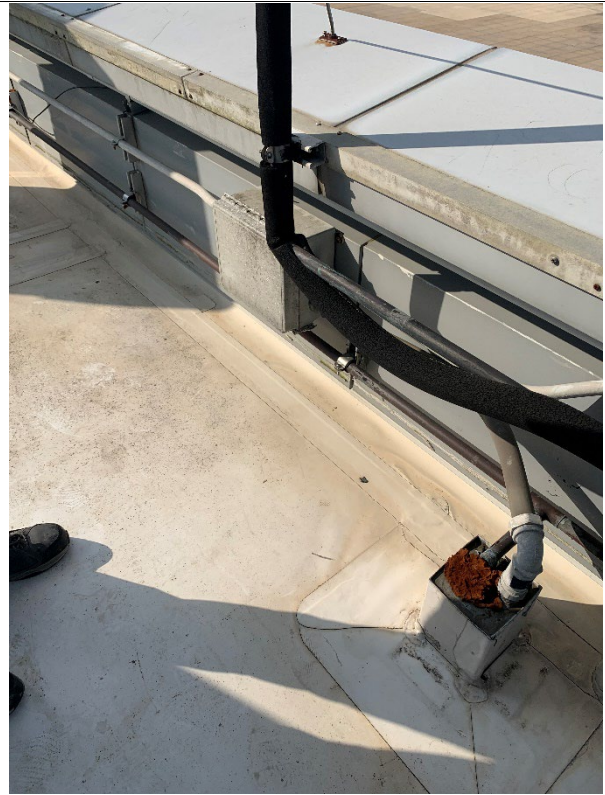


Figure 14: Electrical to the roof. (Liquidtight to be replaced)



Figure 15: Typical View of water line on Roof area, and solenoid. (To be Replaced)

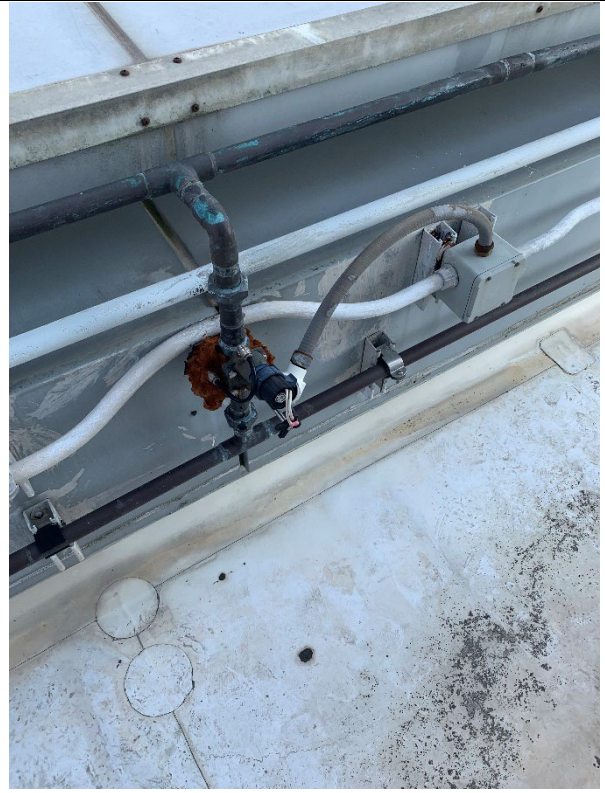


Figure 16: Typical view of water supply line around perimeter (below), solenoid valve and T to dual sprayers (above). To be Replaced.